



## National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Permit Program Factsheet

<b>Permittee:</b> Metropolitan Council Environmental Services 390 Robert Street North St. Paul, MN 55101  <b>Permit Number:</b> MN0029815	<b>Facility Name:</b> MCES - Metropolitan WWTF 2400 Childs Road St. Paul, MN 55106
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<b>Current Permit Expiration:</b> April 31, 2010
<b>Public Comment Period Begins:</b> May 6, 2015 <b>Period Ends:</b> June 5, 2015
<b>Receiving Water:</b> Mississippi River: 2C, 3C, 4A, 4B, 5, 6 water
<b>Proposed Action:</b> Permit Reissuance

**Permitting Contact**  
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## **Purpose and Participation**

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### **Purpose**

This factsheet outlines the principal issues related to the preparation of this draft permit and documents the decisions that were made in the determination of the effluent limitations and conditions of this permit.

### **Applicable Statutes**

This factsheet has been prepared according to the Title 40 Federal Code of Regulations (CFR) 124.8 and 124.56 and Minn R. 7001.0100, subp. 3 in regards to a draft National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) permit to construct and/or operate wastewater treatment facilities and to discharge into waters of the state of Minnesota.

### **Public Participation**

You may submit written comments on the terms of the draft permit or on the Commissioner's preliminary determination. Your written comments must include the following:

1. A statement of your interest in the permit application or the draft permit.
2. A statement of the action you wish the Minnesota Pollution Control Agency (MPCA) to take, including specific references to sections of the draft permit that you believe should be changed.
3. The reasons supporting your position, stated with sufficient specificity as to allow the Commissioner to investigate the merits of your position.

You may also request that the MPCA Commissioner hold a public informational meeting. A public informational meeting is an informal meeting which the MPCA may hold to help clarify and resolve issues.

In accordance with Minn. R. 7000.0650 and Minn. R. 7001.0110, your petition requesting a public informational meeting must identify the matter of concern and must include the following: items 1 through 3 identified above; a statement of the reasons the MPCA should hold the meeting; and the issues you would like the MPCA to address at the meeting.

In addition, you may submit a petition for a contested case hearing. A contested case hearing is a formal hearing before an administrative law judge. Your petition requesting a contested case hearing must include a statement of reasons or proposed findings supporting the MPCA decision to hold a contested case hearing pursuant to the criteria identified in Minn. R. 7000.1900, subp. 1 and a statement of the issues proposed to be addressed by a contested case hearing and the specific relief requested. To the extent known, your petition should include a proposed list of witnesses to be presented at the hearing, a proposed list of publications, references or studies to be introduced at the hearing, and an estimate of time required for you to present the matter at hearing.

You must submit all comments, requests, and petitions during the public comment period identified on page 1 of this notice. All written comments, requests, and petitions received during the public comment period will be considered in the final decisions regarding the permit. If the MPCA does not receive any written comments, requests, or petitions during the public comment period, the Commissioner or other MPCA staff as authorized by the Commissioner will make the final decision concerning the draft permit. During the public comment period, however, you may request that the draft permit be presented to the

MPCA's Citizens' Board (Board) for final decision. You may participate in the activities of the Board as provided in Minn. R. 7000.0650.

**Comments, petitions, and/or requests must be submitted by the last day of the public comment period to:**

Nicole Blasing  
Minnesota Pollution Control Agency  
7678 College Road, Suite 105  
Baxter, MN 56425

The permit will be reissued if the MPCA determines that the proposed Permittee or Permittees will, with respect to the facility or activity to be permitted, comply or undertake a schedule to achieve compliance with all applicable state and federal pollution control statutes and rules administered by the MPCA and the conditions of the permit and that all applicable requirements of Minn. Stat. ch. 116D and the rules promulgated thereunder have been fulfilled.

More detail on all requirements placed on the facility may be found in the permit document.

## **Facility Description**

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### **Background Information**

#### Facility Location

The Metropolitan Council Environmental Services Metropolitan Wastewater Treatment Facility (Facility) is an existing municipal facility located in the E ½ of SE ¼, Section 9, Township 28 North, Range 22 West, city of St. Paul, Ramsey County, Minnesota. The Facility is located at 2400 Childs Road, southeast of the city of St. Paul on the Mississippi River.

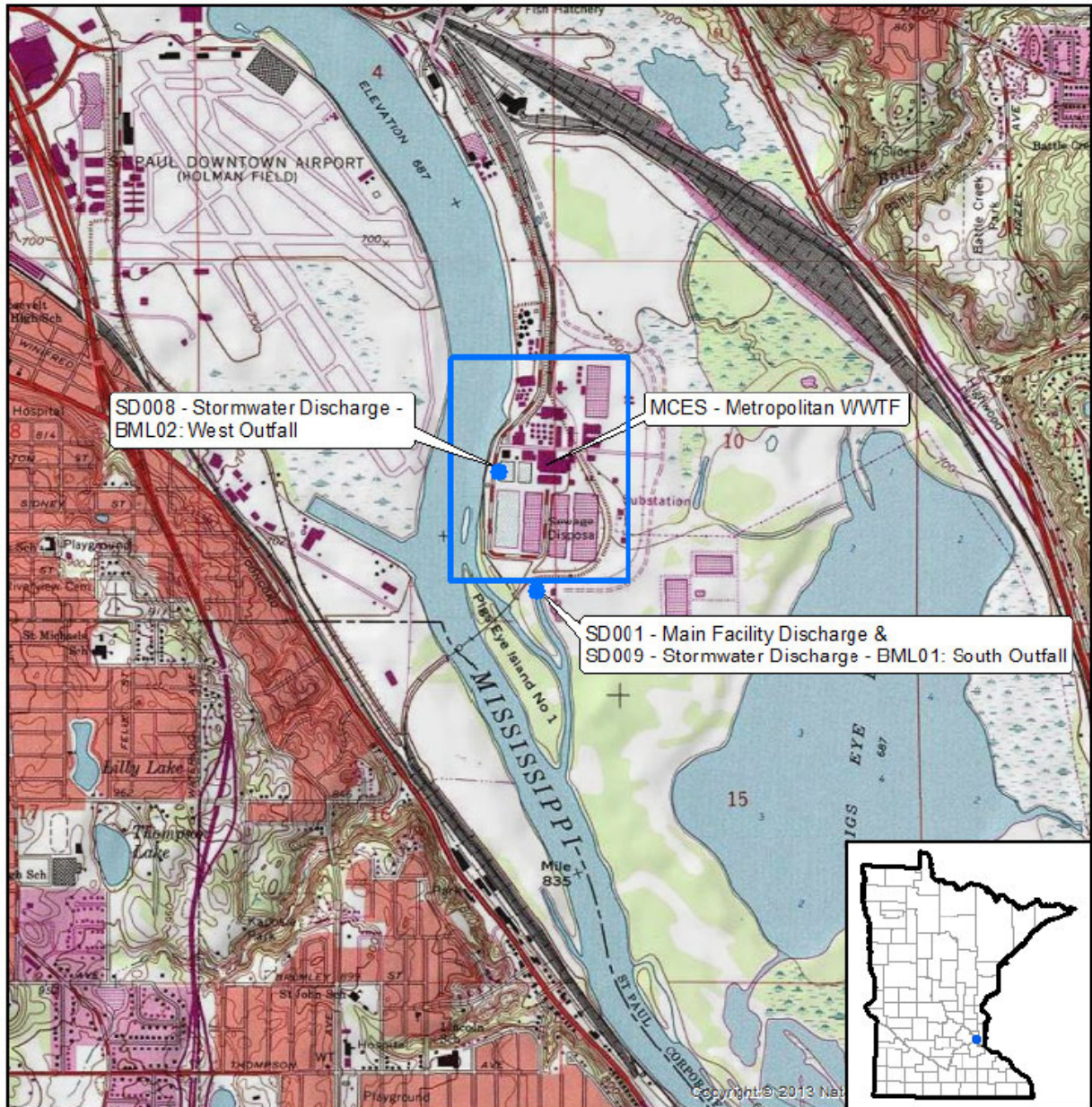
#### Outfall Location

The continuous discharge outfall for this Facility (SD001) is located in the SE ¼ of SE ¼, Section 9, Township 28 North, Range 22 West, city of St. Paul, Ramsey County, Minnesota. Latitude 44° 55' 16", Longitude 93° 02' 46". The location of SD001 - Main Facility Discharge is shown on the map below.

## Map of Permitted Facility

### Topographic Map of Permitted Facility

MN0029815: MCES - Metropolitan Wastewater Treatment Facility  
T28N, R22W, Section 9  
St. Paul, Ramsey County, Minnesota



Map produced by: MPCA Staff, 6/19/2014  
Source: USGS Quad  
Scale: 1:25,000

0 0.275 0.55 1.1Miles



## **Components and Treatment Technology**

### Current Information

The Facility has one continuous discharge (SD001) to the Mississippi River (Class 2C, 3C, 4A, 4B, 5, 6 water) at Mississippi River mile 836. The Facility is designed to treat an average wet-weather design flow (AWWDF) of up to 314 million gallons per day (mgd) and an average annual design flow (AADF) of 251 mgd with a five-day carbonaceous biochemical oxygen demand (CBOD<sub>5</sub>) strength of 200 milligrams per Liter (mg/L). This is a Class A facility.

**Pretreatment and Liquid Processes:** Influent wastewater consists of domestic, industrial and commercial wastewater from the Facility's collection system, wastes discharged to the Liquid Waste Receiving (LWR) Station located at the Facility, interceptor clean-out waste, and flow from the South St. Paul forcemain. All influent flow is directed to the pretreatment process, which consists of 10 mechanical bar screens (eight are ½-inch bar screens, two are 1-inch bar screens) and 10 grit chambers. Recycle flows from the Facility's solids dewatering process are combined with influent flow for treatment in eight primary clarifiers. From the clarifiers, the flow is then split for treatment in two activated sludge systems being operated as a single stage nitrification process with biological phosphorus removal; each activated sludge system (East and West) consists of eight aeration tanks (16 total) and 12 settling tanks (24 total). After secondary treatment, up to 10 mgd of plant effluent is recycled for odor control purposes. In addition, treated effluent is used for in-plant processes related to solids management; the balance of the treated wastewater is discharged via SD001 to the Mississippi River. From April 1 - October 30, Facility effluent is disinfected with bleach and dechlorinated with sodium bisulfite. Effluent is aerated with a cascade aerator during conditions of low flow, as defined by the permit. The Facility is additionally described in plans and specifications on file with the MPCA, as well as on the attached Process Flow Diagram.

**Solids Treatment Process:** Primary and secondary biosolids from the Facility's Liquid Treatment Process, including foam, as well as biosolids from other Metropolitan Council Environmental Services (MCES) wastewater treatment facilities, are thickened with 6 gravity and 16 floatation thickeners. The thickened sludge is held in eight biosolids storage tanks, then blended and conditioned with alum and polymer, and dewatered with centrifuges (8 total) prior to incineration on-site in three identically equipped Fluidized Bed Reactors (FBR's). On-site incineration of biosolids is authorized by Air Emissions Permit No. 12300053. Solid waste disposal of biosolids is authorized by this permit, if necessary, as determined by the Permittee. Scum, grit, screenings and incineration ash are disposed of off-site as solid waste.

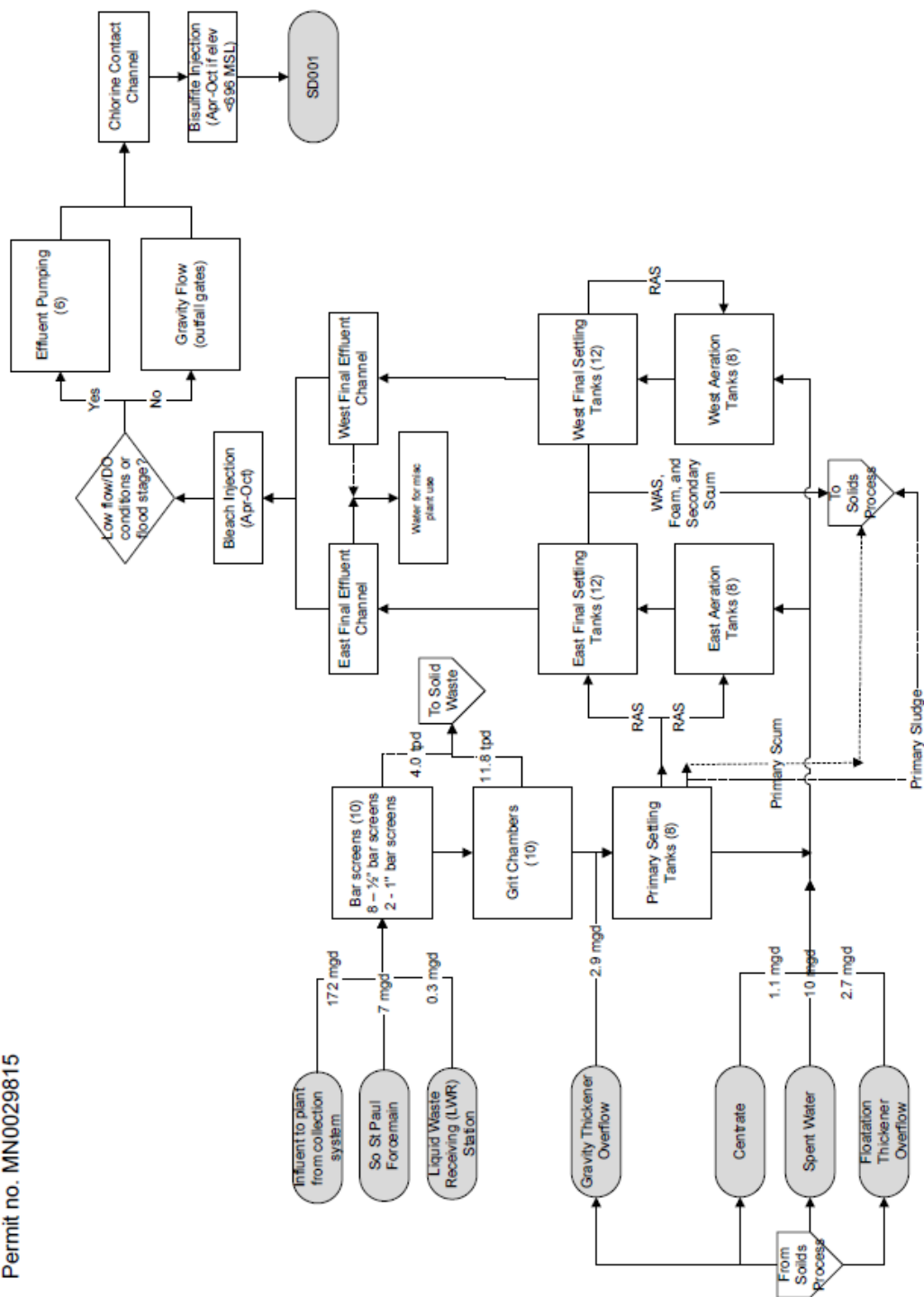


# Flow Schematic – Pretreatment and Liquids Treatment Processes

## B3: Process Flow Diagram or Schematic – Pretreatment and Liquids Treatment Processes

MCES-Metropolitan WWTF

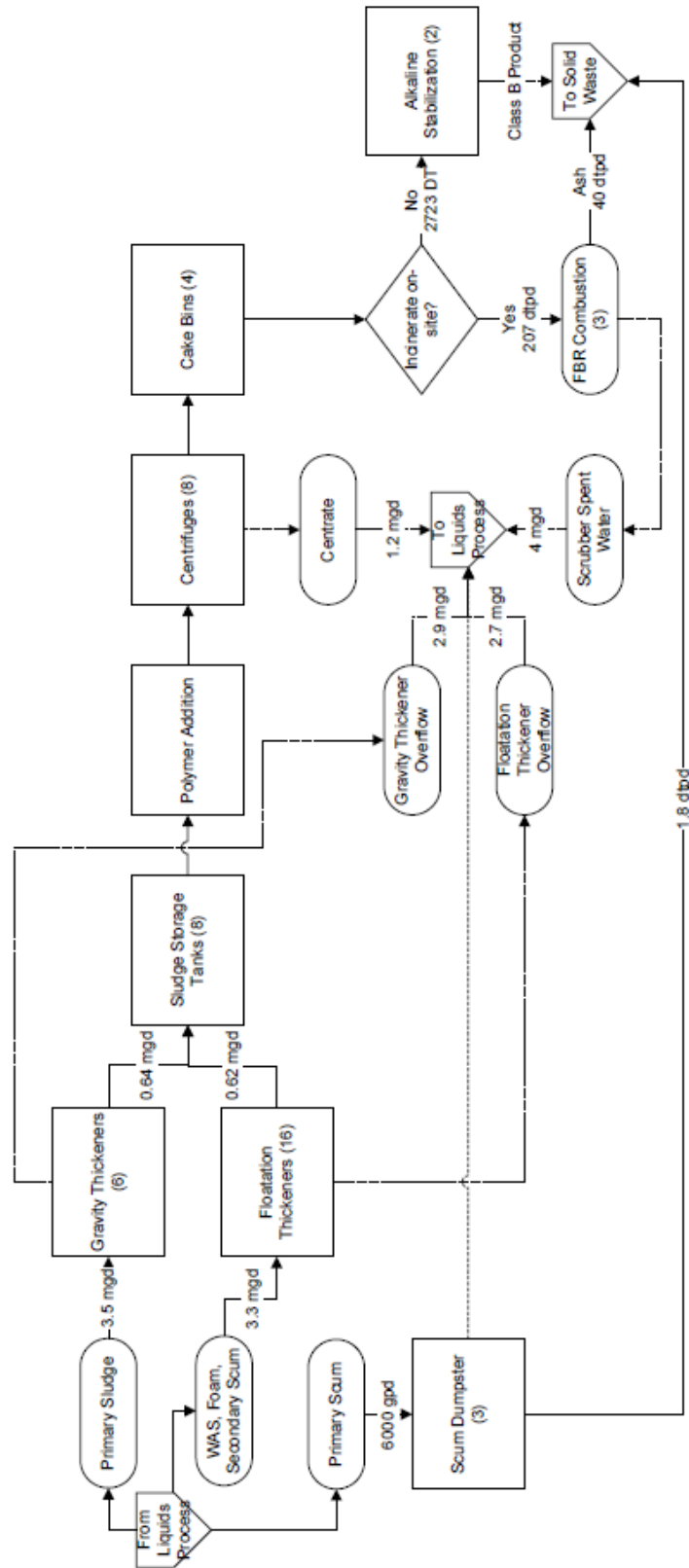
Permit no. MN0029815



rev 6/2014  
(2013 data)

# Flow Schematic – Solids Treatment Processes

B3: Process Flow Diagram or Schematic – Solids Treatment Process  
 MCES-Metropolitan WWTF  
 Permit no. MN0029815



rev 6/2014  
 (2013 data)



## Changes to Facility or Operation

No changes are proposed for this Facility within the permit cycle.

## Significant Industrial Users (SIUs)

The Permittee has delegated authority to operate as a Publicly Owned Treatment Works (POTW) Control Authority under the General Pretreatment Regulations and Minnesota Rules Chapter 7049. The Permittee controls SIU's by issuing enforceable permits and monitoring requirements. Pollutants of concern are monitoring and or limited by the Permittee to an extent necessary to prevent interference or pass through.

The Permittee regulates a total of 242 Significant Industrial Users (SIU) and 171 Categorical Industrial Users (CIU) among eight wastewater treatment plants. An estimated 75 percent of the SIUs and CIUs discharge to the Metropolitan WWTP. The Permittee performs local limit reviews to determine if the local limits need to be adjusted to remain protective.

## Recent Compliance History

There are no recent or historical compliance issues at the Facility. The most recent inspection was a U.S. Environmental Protection Agency (EPA) led compliance inspection on July 22-24, 2013. Prior to that inspection, the MPCA performed an inspection on June 9, 2011. That inspection was led by MPCA staff, Eric Pederson.

## Recent Monitoring History

### Surface Discharge Station SD001 (Main Facility Discharge)

Parameter Name	Limit and Units	Limit Type	1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14	12/14	Ave
BOD, Carbonaceous 05 Day (20 Deg C)	85 %	MnCalMoAvg	99	99	99	99	99	99	99	99	99	99	99	99	99.0
Percent Removal															
BOD, Carbonaceous 05 Day (20 Deg C)	11869 kg/day	CalMoAvg							991	1532	1686				1,403.0
BOD, Carbonaceous 05 Day (20 Deg C)	13283 kg/day	CalMoAvg													
BOD, Carbonaceous 05 Day (20 Deg C)	16617 kg/day	CalMoAvg						1159							1,159.0
BOD, Carbonaceous 05 Day (20 Deg C)	28486 kg/day	CalMoAvg	2419	2531	2683	2498	1969					1040	1454	1642	2,029.5
BOD, Carbonaceous 05 Day (20 Deg C)	9488 kg/day	CalMoAvg													
BOD, Carbonaceous 05 Day (20 Deg C)	14232 kg/day	MxCalWkAvg													
BOD, Carbonaceous 05 Day (20 Deg C)	19221 kg/day	MxCalWkAvg							1583	1977	1819				1,793.0
BOD, Carbonaceous 05 Day (20 Deg C)	19924 kg/day	MxCalWkAvg													
BOD, Carbonaceous 05 Day (20 Deg C)	26909 kg/day	MxCalWkAvg						2267							2,267.0
BOD, Carbonaceous 05 Day (20 Deg C)	51257 kg/day	MxCalWkAvg	3182	3726	2998	2435	3222					1416	1864	1855	2,587.25
BOD, Carbonaceous 05 Day (20 Deg C)	10 mg/L	CalMoAvg													
BOD, Carbonaceous 05 Day (20 Deg C)	14 mg/L	CalMoAvg													
BOD, Carbonaceous 05 Day (20 Deg C)	24 mg/L	CalMoAvg	4	4	4	3	2					<2	2	3	3.143
BOD, Carbonaceous 05 Day (20 Deg C)	15 mg/L	MxCalWkAvg													
BOD, Carbonaceous 05 Day (20 Deg C)	21 mg/L	MxCalWkAvg													
BOD, Carbonaceous 05 Day (20 Deg C)	40 mg/L	MxCalWkAvg	5	6	5	3	3					2	3	3	3.75
Cadmium, Total (as Cd)	ug/L	CalMoAvg	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	
Chlorine, Total Residual	0.038 mg/L	DailyMax				<.005	<.005	<.005	.01	.033	<.005	<.005			0.022
Chromium, Total (as Cr)	ug/L	CalMoAvg	<2	<2	2.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	2.2
Copper, Total (as Cu)	ug/L	CalMoAvg	6.2	7.8	9.1	5.3	<2	3.3	<2	3.8	4.5	4.1	4.6	4.8	5.35
Cyanide, Free (as CN)	ug/L	CalMoAvg	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	
Cyanide, Total (as CN)	ug/L	CalMoAvg	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	
Cyanide, Total (as CN)	ug/L	CalMoAvg	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	
Fecal Coliform, MPN or Membrane Filter 44.5C	200 #100ml	CalMoGeoMn				57	58	97	80	117	97	76			83.143
Lead, Total (as Pb)	ug/L	CalMoAvg	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Mercury, Total (as Hg)	0.0085 kg/day	CalMoAvg	.0014	.0015	.0018	.0016	.0029	.0022	.0025	.002	.0041	.0025	.0017	.0025	0.002
Mercury, Total (as Hg)	9 ng/L	CalMoAvg	2	2	3	2	3	2	3	3	6	4	3	4	3.083
Mercury, Total (as Hg)	14 ng/L	DailyMax	2	3	3	2	4	3	3	3	7	4	3	4	3.417
Nickel, Total (as Ni)	ug/L	CalMoAvg	5.2	6.3	8.1	5.3	5	4.8	4.7	5.7	8.6	6	5.4	6.3	5.95
Nickel, Total (as Ni)	ug/L	CalMoAvg	5.2	6.3	8.1	5.3	5	4.8	4.7	5.7	8.6	6	5.4	6.3	5.95
Nitrogen, Ammonia, Total (as N)	10682 kg/day	CalMoAvg										2012			2,012.0
Nitrogen, Ammonia, Total (as N)	12334 kg/day	CalMoAvg													
Nitrogen, Ammonia, Total (as N)	15430 kg/day	CalMoAvg					1241								1,241.0

# Surface Discharge Station SD001 (Main Facility Discharge)

Parameter Name	Limit and Units	Limit Type	1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14	12/14	Ave
Nitrogen, Ammonia, Total (as N)	19924 kg/day	CalMoAvg													
Nitrogen, Ammonia, Total (as N)	24925 kg/day	CalMoAvg											4944		4,944.0
Nitrogen, Ammonia, Total (as N)	4744 kg/day	CalMoAvg													
Nitrogen, Ammonia, Total (as N)	5935 kg/day	CalMoAvg							1061	2075	2643				1,926.333
Nitrogen, Ammonia, Total (as N)	7590 kg/day	CalMoAvg													
Nitrogen, Ammonia, Total (as N)	8539 kg/day	CalMoAvg													
Nitrogen, Ammonia, Total (as N)	9495 kg/day	CalMoAvg						891							891.0
Nitrogen, Ammonia, Total (as N)	kg/day	CalMoAvg	3593	4549	4569	1558								6738	4,201.4
Nitrogen, Ammonia, Total (as N)	11385 kg/day	MxCalWkAvg													
Nitrogen, Ammonia, Total (as N)	12334 kg/day	MxCalWkAvg													
Nitrogen, Ammonia, Total (as N)	15377 kg/day	MxCalWkAvg						968							968.0
Nitrogen, Ammonia, Total (as N)	15430 kg/day	MxCalWkAvg					2526								2,526.0
Nitrogen, Ammonia, Total (as N)	17299 kg/day	MxCalWkAvg									2215				2,215.0
Nitrogen, Ammonia, Total (as N)	19924 kg/day	MxCalWkAvg													
Nitrogen, Ammonia, Total (as N)	40365 kg/day	MxCalWkAvg											5779		5,779.0
Nitrogen, Ammonia, Total (as N)	7116 kg/day	MxCalWkAvg													
Nitrogen, Ammonia, Total (as N)	8539 kg/day	MxCalWkAvg													
Nitrogen, Ammonia, Total (as N)	9611 kg/day	MxCalWkAvg							1257	2960	2923				2,380.0
Nitrogen, Ammonia, Total (as N)	kg/day	MxCalWkAvg	4680	5215	7042	1911								7497	5,269.0
Nitrogen, Ammonia, Total (as N)	13 mg/L	CalMoAvg													
Nitrogen, Ammonia, Total (as N)	21 mg/L	CalMoAvg													
Nitrogen, Ammonia, Total (as N)	5.0 mg/L	CalMoAvg													
Nitrogen, Ammonia, Total (as N)	8 mg/L	CalMoAvg													
Nitrogen, Ammonia, Total (as N)	9.0 mg/L	CalMoAvg													
Nitrogen, Ammonia, Total (as N)	mg/L	CalMoAvg	5.93	7.52	7.23	2.04								10.97	6.738
Nitrogen, Ammonia, Total (as N)	12 mg/L	MxCalWkAvg													
Nitrogen, Ammonia, Total (as N)	13 mg/L	MxCalWkAvg													
Nitrogen, Ammonia, Total (as N)	13.5 mg/L	MxCalWkAvg										3.4			3.4
Nitrogen, Ammonia, Total (as N)	21 mg/L	MxCalWkAvg													
Nitrogen, Ammonia, Total (as N)	31.5 mg/L	MxCalWkAvg											9.3		9.3
Nitrogen, Ammonia, Total (as N)	7.5 mg/L	MxCalWkAvg													
Nitrogen, Ammonia, Total (as N)	9.0 mg/L	MxCalWkAvg													
Nitrogen, Ammonia, Total (as N)	mg/L	MxCalWkAvg	7.74	8.61	11.44	2.67								12.24	8.54
Nitrogen, Nitrate, Total (as N)	mg/L	CalMoAvg	12.37	10.98	11.39	14.61	13.27	11.2	11.4	12.16	15.17	16.72	11.26	7.66	12.349
Nitrogen, Nitrite, Total (as N)	mg/L	CalMoAvg	.98	.99	1.31	.54	.5	.5	.73	1.33	.7	.6	.68	.93	0.816
Oxygen, Dissolved	7.0 mg/L	MinCalWkAv													
Oxygen, Dissolved	mg/L	MinCalWkAv						7.9	2.7	3.6	3.9				4.525
PCBs (Polychlorinated biphenyls )	0.039 gr/day	CalMoAvg	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0
PCBs (Polychlorinated biphenyls )	0.041 ng/L	CalMoAvg	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	
PCBs (Polychlorinated biphenyls )	0.07 ng/L	DailyMax	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	
pH	9.0 SU	CalMoMax	7.5	7.3	7.3	7.2	7.3	7.3	7.3	7.3	7.2	7.2	7.4	7.4	7.308
pH	6.0 SU	CalMoMin	7	7	7	6.8	6.9	7	6.8	6.9	6.8	6.8	6.9	7	6.908
Phosphorus, Dissolved	mg/L	CalMoAvg	.2	.5	.3	.2	.2	.2	.1	.2	.2	.1	.2	.2	0.217
Phosphorus, Total (as P)	431077 kg/yr	12MoTotal	81103	86293	86428	89023	84283	83770	84413	82354	82210	81810	81405	81659	83,729.25
Phosphorus, Total (as P)	kg/mo	CalMoTot	5629.9	10160	7894.9	9049.6	7824.8	8823.4	4972.3	4318.3	6055.7	5969.1	3731.9	5700	6,677.492
Phosphorus, Total (as P)	1.0 mg/L	12MoMovAve	.3	.4	.4	.4	.4	.3	.3	.3	.3	.3	.3	.3	0.333
Phosphorus, Total (as P)	mg/L	CalMoAvg	.3	.6	.4	.4	.3	.3	.2	.2	.3	.3	.2	.3	0.317
Solids, Total Suspended (TSS) Percent Removal	85 %	MnCalMoAvg	99	99	99	99	99	98	99	99	99	99	99	99	98.917
Solids, Total Suspended (TSS)	35608 kg/day	CalMoAvg	1621	2142	2411	2736	1873	5604	1661	1706	2196	1636	1575	1545	2,225.5
Solids, Total Suspended (TSS)	57664 kg/day	MxCalWkAvg	1990	3210	2858	2515	3875	17280	2383	1791	2487	2165	1878	1683	3,676.25
Solids, Total Suspended (TSS)	30 mg/L	CalMoAvg	<3	4	4	4	<3	4	<3	<3	3	<3	<3	<3	3.8
Solids, Total Suspended (TSS)	45 mg/L	MxCalWkAvg	3	5	5	4	4	11	<3	<3	4	3	<3	<3	4.875
Zinc, Total (as Zn)	ug/L	CalMoAvg	51.7	47.7	55.2	46	41.1	26.1	32.6	33.8	34.4	35.5	36.5	41.3	40.158
Zinc, Total (as Zn)	ug/L	CalMoAvg	51.7	47.7	55.2	46	41.1	26.1	32.6	33.8	34.4	35.5	36.5	41.3	40.158

## Surface Discharge Station SD002 (020 Bypass At Facility Head)

Parameter Name	Limit and Units	Limit Type	1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14	12/14	Ave
BOD, Carbonaceous 05 Day (20 Deg C)	mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Flow	MG	CalMoTot	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Phosphorus, Total (as P)	mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Solids, Total Suspended (TSS)	mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	

## Surface Discharge Station SD003 (030 Bypass After Primary Treatment)

Parameter Name	Limit and Units	Limit Type	1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14	12/14	Ave
BOD, Carbonaceous 05 Day (20 Deg C)	mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Flow	MG	CalMoTot	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Phosphorus, Total (as P)	mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Solids, Total Suspended (TSS)	mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	

Surface Discharge Station SD004 (040 Third & Commercial Bypass)

Parameter Name	Limit and Units	Limit Type	1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14	12/14	Ave
BOD, Carbonaceous 05 Day (20 Deg C)	mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Flow	MG	CalMoTot	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Phosphorus, Total (as P)	mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Solids, Total Suspended (TSS)	mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	

Surface Discharge Station SD005 (060 So St Paul Storage Pond)

Parameter Name	Limit and Units	Limit Type	1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14	12/14	Ave
BOD, Carbonaceous 05 Day (20 Deg C)	mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Flow	MG	CalMoTot	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Phosphorus, Total (as P)	mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Solids, Total Suspended (TSS)	mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	

Surface Discharge Station SD006 (070 So St Paul - Prior To Lift)

Parameter Name	Limit and Units	Limit Type	1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14	12/14	Ave
BOD, Carbonaceous 05 Day (20 Deg C)	mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Flow	MG	CalMoTot	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Phosphorus, Total (as P)	mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Solids, Total Suspended (TSS)	mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	

Surface Discharge Station SD007 (080 So St Paul - After Lift)

Parameter Name	Limit and Units	Limit Type	1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14	12/14	Ave
BOD, Carbonaceous 05 Day (20 Deg C)	mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Flow	MG	CalMoTot	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Phosphorus, Total (as P)	mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Solids, Total Suspended (TSS)	mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	

Surface Water Station SW001 (UM 836.8)

Parameter Name	Limit and Units	Limit Type	1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14	12/14	Ave
Flow, Stream, Instantaneous	cfs	CalMoAvg	5156	5039	8342	30817	46072	71192	39760	12093	19379	8980	8291		23,192.818
Oxygen, Dissolved	mg/L	DailyAve					10.4	8.1	7.7	7.9	9.4	10.5			9.0

Surface Water Station SW002 (UM 826.7 or UM 831.0)

Parameter Name	Limit and Units	Limit Type	1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14	12/14	Ave
Oxygen, Dissolved	mg/L	DailyAve					9.9	7.7	7.5	7.8	9	10.4			8.717

Waste Stream Station WS001 (Influent Waste Stream)

Parameter Name	Limit and Units	Limit Type	1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14	12/14	Ave
BOD, Carbonaceous 05 Day (20 Deg C)	mg/L	CalMoAvg	298	273	295	236	218	155	171	208	224	229	234	237	231.5
BOD, Carbonaceous 05 Day (20 Deg C)	mg/L	CalMoMax	370	370	370	320	300	210	220	290	300	300	310	280	303.333
Cadmium, Total (as Cd)	ug/L	CalMoAvg	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	<.3	
Chromium, Total (as Cr)	ug/L	CalMoAvg	9	8.1	8.8	9.9	5.5	4.5	5.3	7.4	8.4	5.5	5.3	6	6.975
Copper, Total (as Cu)	ug/L	CalMoAvg	98.3	106.2	89	88.4	67.5	54.3	65.8	76.6	89.6	79.1	82.2	83	81.667
Cyanide, Free (as CN)	ug/L	CalMoAvg	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	
Cyanide, Total (as CN)	ug/L	CalMoAvg	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	
Cyanide, Total (as CN)	ug/L	CalMoAvg	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	
Flow	MG	CalMoTot	4958	4474	5215	5977	6891	7770	6568	5705	5333	5257	4930	5020	5,674.833
Flow	mgd	CalMoAvg	160	160	168	199	222	259	212	184	178	170	164	162	186.5
Flow	mgd	CalMoMax	165	163	187	331	271	422	243	193	191	188	170	168	224.333
Lead, Total (as Pb)	ug/L	CalMoAvg	5.8	7.3	12.9	13.8	4.8	3.7	4.2	4.9	5.1	6.4	4.6	5	6.542
Mercury, Total (as Hg)	ug/L	CalMoAvg	76.4	47.3	56.2	111.5	35.8	46.2	46.8	70	54.2	96.6	90.7	54.6	65.525
Nickel, Total (as Ni)	ug/L	CalMoAvg	8.3	16.8	10.1	8.1	5.1	5.1	6.2	6	8.9	6.3	6.1	9.4	8.033
Nickel, Total (as Ni)	ug/L	CalMoAvg	8.3	16.8	10.1	8.1	5.1	5.1	6.2	6	8.9	6.3	6.1	9.4	8.033
Nitrogen, Ammonia, Total (as N)	mg/L	CalMoAvg	29.2	28.39	25.79	22.49	19.34	15.46	17.15	19.51	22.04	24.5	23.87	23.53	22.606
PCBs (Polychlorinated biphenyls )	ng/L	CalMoAvg	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	
pH	SU	CalMoMax	7.3	8.8	10.1	7.5	7.8	7.7	8.6	7.7	7.5	7.9	8	7.7	8.05
pH	SU	CalMoMin	6.2	6.2	6.8	6.8	3.9	5.8	6.3	6.9	6.8	7.1	7.1	6.4	6.358
Phosphorus, Dissolved	mg/L	CalMoAvg	2.9	2.8	2.8	2.4	2	1.5	1.9	2.1	2.4	2.6	2.3	2.6	2.358
Phosphorus, Total (as P)	mg/L	CalMoAvg	6.4	6.3	6.3	5.7	5.1	3.9	4.9	5.4	6	6.2	6.1	6	5.692
Solids, Total Suspended (TSS)	mg/L	CalMoAvg	277	274	286	278	247	200	227	278	282	239	263	283	261.167
Solids, Total Suspended (TSS)	mg/L	CalMoMax	333	374	326	464	342	315	303	392	362	328	324	346	350.75
Zinc, Total (as Zn)	ug/L	CalMoAvg	180.6	167.3	165	183.8	129.8	102.9	126.3	135.5	174.3	139.8	143	146.3	149.55
Zinc, Total (as Zn)	ug/L	CalMoAvg	180.6	167.3	165	183.8	129.8	102.9	126.3	135.5	174.3	139.8	143	146.3	149.55

## Receiving Water

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### Use Classification

The receiving water is the Mississippi River (2C, 3C, 4A, 4B, 5, 6 water).

This classification indicates that the body of water is capable of sustaining aquatic life and recreation. Aquatic life and recreation include the ability to support fish, other aquatic life, bathing, boating, or other recreational purposes for which water quality control is or may be necessary to protect aquatic or terrestrial life and its habitat, or public health, safety, or welfare.

The use classifications are as follows:

#### **Class 2 waters, aquatic life, and recreation.**

Aquatic life and recreation includes all waters of the state that support or may support fish, other aquatic life, bathing, boating, or other recreational purposes, and for which quality control is or may be necessary to protect aquatic or terrestrial life or their habitats, or the public health, safety, or welfare.

#### **Class 3 waters, industrial consumption.**

Industrial consumption includes all waters of the state that are or may be used as a source of supply for industrial process or cooling water, or any other industrial or commercial purposes, and for which quality control is or may be necessary to protect the public health, safety, or welfare.

#### **Class 4 waters, agriculture, and wildlife.**

Agriculture and wildlife includes all waters of the state that are or may be used for any agricultural purposes, including stock watering and irrigation, or by waterfowl or other wildlife, and for which quality control is or may be necessary to protect terrestrial life and its habitat, or the public health, safety, or welfare.

#### **Class 5 waters, aesthetic enjoyment, and navigation.**

Aesthetic enjoyment and navigation includes all waters of the state that are or may be used for any form of water transportation or navigation or fire prevention, and for which quality control is or may be necessary to protect the public health, safety, or welfare.

#### **Class 6 waters, other uses, and protection of border waters.**

Other uses include all waters of the state that serve or may serve the uses in subparts 2 to 6, or any other beneficial uses not listed in this part, including, without limitation, any such uses in this or any other state, province, or nation of any waters flowing through or originating in this state, and for which quality control is or may be necessary for the declared purposes in this part, to conform with the requirements of the legally constituted state or national agencies having jurisdiction over such waters, or for any other considerations the MPCA may deem proper.

More information on the classification of waters can be found in Minn. R. 7050.0140.

## Downstream Impairments and TMDL Status

Downstream Impairments	Number of Impairments	TMDL Status
<b>Mississippi River</b>	<b>17</b>	
		A draft <a href="#">South Metro Mississippi TMDL Turbidity Impairment</a> has been completed. <i>See the Wasteload Allocation (WLA) section below.</i>
Turbidity	4	
PCB in Fish Tissue	4	TMDLs are not underway for PCB or PFOS impairments at this time. <i>See the Proposed Effluent Limits section for additional information regarding PCB and PFOS in relation to this discharge.</i>
Perfluorooctane Sulfonate (PFOS) in Fish Tissue	2	
Mercury in Water Column	3	
Mercury in Fish Tissue	4	<i>See the WLA section below.</i>
<b>Pepin Lake</b>	<b>1</b>	
		The draft <a href="#">Lake Pepin – Excess Nutrients TMDL</a> is on hold until a site specific water quality standard is approved in connection with the next iteration of Minnesota Rules Chapter 7050 expected to occur in fall of 2014. <i>See WLA section below.</i>
Nutrient/Eutrophication Biological Indicators	1	
<b>Mississippi River</b>	<b>6</b>	
Mercury in Fish Tissue	3	<i>See the WLA section below.</i>
		TMDLs are not underway for PCB impairments at this time. <i>See the Proposed Effluent Limits section for additional information regarding PCB and PFOS in relation to this discharge.</i>
PCB in Fish Tissue	3	
<b>Grand Total</b>	<b>29</b>	

## Waste Load Allocations (WLA)

- Mercury in Fish Tissue and Mercury in Water Column Impairments
  - ✓ The statewide mercury total maximum daily load (TMDL) was approved by EPA on March 27, 2007, and the Implementation Plan was approved in 2008.
  - ✓ The [Statewide Mercury TMDL](#) is applicable to these impairments. Permit limits and monitoring requirements should be in accordance with the [Permit Writers Guidance](#) for implementing the [Mercury Permitting Strategy](#).
- draft [South Metro Mississippi TMDL Turbidity Impairment](#)
  - ✓ draft TSS WLA = 12,996,920 kg/year and 35,608.00 kg/day.
  - ✓ The draft WLA is equivalent to the currently permitted total suspended solids (TSS) load limit at the permitted AWWDF of 314 mgd and the TSS limit of 30 mg/L Calendar Month Average.
- draft [Lake Pepin – Excess Nutrients TMDL](#)
  - ✓ The discharge is located within the TMDL's project area. A total phosphorous Water Quality Based Effluent Limit (WQBEL) was developed for this Facility as part of the draft Metropolitan Council Environmental Services (MCES) System-Wide Phosphorous NPDES/SDS Permit No. MN0070629.

## **Existing Permit Effluent Limits**

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The effluent limits and monitoring requirements in the current permit are presented below.

### **Technology Based Effluent Limits (TBELs)**

The TSS, pH, fecal coliform bacteria limits and percent removal limits are technology based effluent limits. These limits are specified in 40 CFR § 133.102 and Minn. R. 7053.0215.

### **Water Quality Based Effluent Limits (WQBELs)**

The concentration limitations for five-day carbonaceous biochemical oxygen demand (CBOD<sub>5</sub>), ammonia nitrogen, dissolved oxygen (DO), total phosphorus, total residual chlorine (TRC), mercury and polychlorinated biphenyl's (PCBs) were developed to be protective of receiving water conditions.

The TRC limit is the final acute value for chlorine found in Minn. R. 7050.0222. This limit is protective of the use classification of the receiving water.

The total phosphorus concentration limit of 1.0 mg/L as a 12 month moving average is in accordance with Minn. R. 7053.0255, subp. 3(A) and subp. 6.

Limits for mercury and PCBs were based on applying the water quality standard directly to the effluent as a waste load allocation, and then determining the permit limits based on the expected variability of the mercury and PCB in effluent. A final effluent limitation that meets the underlying water quality standard at the discharge does not "cause or contribute" to water quality standards violations based on EPA policy established July 13, 2000 (65 FR 43642).

## Existing Limits and Monitoring Requirements

*Period: Limits Applicable in the Final Period*  
SD 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
BOD, Carbonaceous 05 Day (20 Deg C)	28486	kg/day	Calendar Month Average	Oct-May	24-Hour Flow Composite	5 x Week	27
BOD, Carbonaceous 05 Day (20 Deg C)	24	mg/L	Calendar Month Average	Oct-May	24-Hour Flow Composite	5 x Week	
BOD, Carbonaceous 05 Day (20 Deg C)	51257	kg/day	Maximum Calendar Week Average	Oct-May	24-Hour Flow Composite	5 x Week	28
BOD, Carbonaceous 05 Day (20 Deg C)	40	mg/L	Maximum Calendar Week Average	Oct-May	24-Hour Flow Composite	5 x Week	
BOD, Carbonaceous 05 Day (20 Deg C) Percent Removal	85	%	Minimum Calendar Month Average	Jan-Dec	Calculation	5 x Week	
Cadmium, Total (as Cd)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	6
Chlorine, Total Residual	0.038	mg/L	Daily Maximum	Apr-Oct	Grab	1 x Day	19
Chromium, Total (as Cr)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	7
Copper, Total (as Cu)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	8
Cyanide, Free (Amen To Chlorination)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	Grab	1 x Week	13
Cyanide, Total (as CN)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	Grab	1 x Week	14
Fecal Coliform, MPN or Membrane Filter 44.5C	200	#100ml	Calendar Month Geometric Mean	Apr-Oct	Grab	5 x Week	
Lead, Total (as Pb)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	9
Mercury, Total (as Hg)	0.0085	kg/day	Calendar Month Average	Jan-Dec	Grab	2 x Month	3
Mercury, Total (as Hg)	9	ng/L	Calendar Month Average	Jan-Dec	Grab	2 x Month	31
Mercury, Total (as Hg)	14	ng/L	Daily Maximum	Jan-Dec	Grab	2 x Month	31
Nickel, Total (as Ni)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	11
Nitrogen, Ammonia, Total (as N)	Monitor Only	kg/day	Calendar Month Average	Dec-Apr	24-Hour Flow Composite	5 x Week	
Nitrogen, Ammonia, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Dec-Apr	24-Hour Flow Composite	5 x Week	
Nitrogen, Ammonia, Total (as N)	Monitor Only	kg/day	Maximum Calendar Week Average	Dec-Apr	24-Hour Flow Composite	5 x Week	
Nitrogen, Ammonia, Total (as N)	Monitor Only	mg/L	Maximum Calendar Week Average	Dec-Apr	24-Hour Flow Composite	5 x Week	
Nitrogen, Nitrate, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Nitrogen, Nitrite, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
PCBs (Polychlorinated biphenyls )	0.039	gr/day	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	15
PCBs (Polychlorinated biphenyls )	0.041	ng/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	2
PCBs (Polychlorinated biphenyls )	0.07	ng/L	Daily Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	15
pH	9.0	SU	Calendar Month Maximum	Jan-Dec	Grab	5 x Week	1
pH	6.0	SU	Calendar Month Minimum	Jan-Dec	Grab	5 x Week	1



*Period: Limits Applicable in the Final Period*  
**SD 001**

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Phosphorus, Dissolved	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	5 x Week	4
Phosphorus, Total (as P)	1.0	mg/L	12 Month Moving Average	Jan-Dec	24-Hour Flow Composite	5 x Week	
Phosphorus, Total (as P)	431077	kg/yr	12 Month Moving Total	Jan-Dec	24-Hour Flow Composite	5 x Week	
Phosphorus, Total (as P)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	5 x Week	5
Phosphorus, Total (as P)	Monitor Only	kg/mo	Calendar Month Total	Jan-Dec	24-Hour Flow Composite	5 x Week	
Solids, Total Suspended (TSS)	35608	kg/day	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	5 x Week	27
Solids, Total Suspended (TSS)	30	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	5 x Week	
Solids, Total Suspended (TSS)	57664	kg/day	Maximum Calendar Week Average	Jan-Dec	24-Hour Flow Composite	5 x Week	28
Solids, Total Suspended (TSS)	45	mg/L	Maximum Calendar Week Average	Jan-Dec	24-Hour Flow Composite	5 x Week	
Solids, Total Suspended (TSS) Percent Removal	85	%	Minimum Calendar Month Average	Jan-Dec	Calculation	5 x Week	12
Zinc, Total (as Zn)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	

*Period: Limits Applicable in the Final Period, Variability of Operation - See Notes for condition that applies*  
**SD 001**

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
BOD, Carbonaceous 05 Day (20 Deg C)	16617	kg/day	Calendar Month Average	Jun	24-Hour Flow Composite	5 x Week	23
BOD, Carbonaceous 05 Day (20 Deg C)	14	mg/L	Calendar Month Average	Jun	24-Hour Flow Composite	5 x Week	22
BOD, Carbonaceous 05 Day (20 Deg C)	26909	kg/day	Maximum Calendar Week Average	Jun	24-Hour Flow Composite	5 x Week	24
BOD, Carbonaceous 05 Day (20 Deg C)	21	mg/L	Maximum Calendar Week Average	Jun	24-Hour Flow Composite	5 x Week	22
BOD, Carbonaceous 05 Day (20 Deg C)	11869	kg/day	Calendar Month Average	Jul-Sep	24-Hour Flow Composite	5 x Week	23
BOD, Carbonaceous 05 Day (20 Deg C)	10	mg/L	Calendar Month Average	Jul-Sep	24-Hour Flow Composite	5 x Week	22
BOD, Carbonaceous 05 Day (20 Deg C)	19221	kg/day	Maximum Calendar Week Average	Jul-Sep	24-Hour Flow Composite	5 x Week	24
BOD, Carbonaceous 05 Day (20 Deg C)	15	mg/L	Maximum Calendar Week Average	Jul-Sep	24-Hour Flow Composite	5 x Week	22
Nitrogen, Ammonia, Total (as N)	15430	kg/day	Calendar Month Average	May	24-Hour Flow Composite	5 x Week	23
Nitrogen, Ammonia, Total (as N)	13	mg/L	Calendar Month Average	May	24-Hour Flow Composite	5 x Week	22
Nitrogen, Ammonia, Total (as N)	15430	kg/day	Maximum Calendar Week Average	May	24-Hour Flow Composite	5 x Week	23
Nitrogen, Ammonia, Total (as N)	13	mg/L	Maximum Calendar Week Average	May	24-Hour Flow Composite	5 x Week	22
Nitrogen, Ammonia, Total (as N)	9495	kg/day	Calendar Month Average	Jun	24-Hour Flow Composite	5 x Week	23

*Period: Limits Applicable in the Final Period, Variability of Operation - See Notes for condition that applies*  
**SD 001**

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Nitrogen, Ammonia, Total (as N)	8	mg/L	Calendar Month Average	Jun	24-Hour Flow Composite	5 x Week	22
Nitrogen, Ammonia, Total (as N)	15377	kg/day	Maximum Calendar Week Average	Jun	24-Hour Flow Composite	5 x Week	24
Nitrogen, Ammonia, Total (as N)	12	mg/L	Maximum Calendar Week Average	Jun	24-Hour Flow Composite	5 x Week	22
Nitrogen, Ammonia, Total (as N)	5935	kg/day	Calendar Month Average	Jul-Sep	24-Hour Flow Composite	5 x Week	23
Nitrogen, Ammonia, Total (as N)	5.0	mg/L	Calendar Month Average	Jul-Sep	24-Hour Flow Composite	5 x Week	22
Nitrogen, Ammonia, Total (as N)	9611	kg/day	Maximum Calendar Week Average	Jul-Sep	24-Hour Flow Composite	5 x Week	24
Nitrogen, Ammonia, Total (as N)	7.5	mg/L	Maximum Calendar Week Average	Jul-Sep	24-Hour Flow Composite	5 x Week	22
Nitrogen, Ammonia, Total (as N)	10682	kg/day	Calendar Month Average	Oct	24-Hour Flow Composite	5 x Week	23
Nitrogen, Ammonia, Total (as N)	9.0	mg/L	Calendar Month Average	Oct	24-Hour Flow Composite	5 x Week	22
Nitrogen, Ammonia, Total (as N)	17299	kg/day	Maximum Calendar Week Average	Oct	24-Hour Flow Composite	5 x Week	24
Nitrogen, Ammonia, Total (as N)	13.5	mg/L	Maximum Calendar Week Average	Oct	24-Hour Flow Composite	5 x Week	22
Nitrogen, Ammonia, Total (as N)	24925	kg/day	Calendar Month Average	Nov	24-Hour Flow Composite	5 x Week	23
Nitrogen, Ammonia, Total (as N)	21	mg/L	Calendar Month Average	Nov	24-Hour Flow Composite	5 x Week	22
Nitrogen, Ammonia, Total (as N)	40365	kg/day	Maximum Calendar Week Average	Nov	24-Hour Flow Composite	5 x Week	24
Nitrogen, Ammonia, Total (as N)	31.5	mg/L	Maximum Calendar Week Average	Nov	24-Hour Flow Composite	5 x Week	22
Oxygen, Dissolved	Monitor Only	mg/L	Minimum Calendar Week Average	Jan-Dec	Grab	1 x Day	

*Period: Limits Applicable in the Final Period, Variability of Operation - See Notes for condition that applies*  
**SD 001**

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
BOD, Carbonaceous 05 Day (20 Deg C)	13283	kg/day	Calendar Month Average	Jun	24-Hour Flow Composite	5 x Week	21
BOD, Carbonaceous 05 Day (20 Deg C)	14	mg/L	Calendar Month Average	Jun	24-Hour Flow Composite	5 x Week	20
BOD, Carbonaceous 05 Day (20 Deg C)	19924	kg/day	Maximum Calendar Week Average	Jun	24-Hour Flow Composite	5 x Week	25
BOD, Carbonaceous 05 Day (20 Deg C)	21	mg/L	Maximum Calendar Week Average	Jun	24-Hour Flow Composite	5 x Week	20
BOD, Carbonaceous 05 Day (20 Deg C)	9488	kg/day	Calendar Month Average	Jul-Sep	24-Hour Flow Composite	5 x Week	21
BOD, Carbonaceous 05 Day (20 Deg C)	10	mg/L	Calendar Month Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20
BOD, Carbonaceous 05 Day (20 Deg C)	14232	kg/day	Maximum Calendar Week Average	Jul-Sep	24-Hour Flow Composite	5 x Week	21
BOD, Carbonaceous 05 Day (20 Deg C)	15	mg/L	Maximum Calendar Week Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20

*Period: Limits Applicable in the Final Period, Variability of Operation - See Notes for condition that applies*  
**SD 001**

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Nitrogen, Ammonia, Total (as N)	12334	kg/day	Calendar Month Average	May	24-Hour Flow Composite	5 x Week	21
Nitrogen, Ammonia, Total (as N)	13	mg/L	Calendar Month Average	May	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	12334	kg/day	Maximum Calendar Week Average	May	24-Hour Flow Composite	5 x Week	21
Nitrogen, Ammonia, Total (as N)	13	mg/L	Maximum Calendar Week Average	May	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	7590	kg/day	Calendar Month Average	Jun	24-Hour Flow Composite	5 x Week	21
Nitrogen, Ammonia, Total (as N)	8	mg/L	Calendar Month Average	Jun	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	11385	kg/day	Maximum Calendar Week Average	Jun	24-Hour Flow Composite	5 x Week	21
Nitrogen, Ammonia, Total (as N)	12	mg/L	Maximum Calendar Week Average	Jun	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	4744	kg/day	Calendar Month Average	Jul-Sep	24-Hour Flow Composite	5 x Week	21
Nitrogen, Ammonia, Total (as N)	5.0	mg/L	Calendar Month Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	7116	kg/day	Maximum Calendar Week Average	Jul-Sep	24-Hour Flow Composite	5 x Week	21
Nitrogen, Ammonia, Total (as N)	7.5	mg/L	Maximum Calendar Week Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	8539	kg/day	Calendar Month Average	Oct	24-Hour Flow Composite	5 x Week	21
Nitrogen, Ammonia, Total (as N)	9.0	mg/L	Calendar Month Average	Oct	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	8539	kg/day	Maximum Calendar Week Average	Oct	24-Hour Flow Composite	5 x Week	21
Nitrogen, Ammonia, Total (as N)	9.0	mg/L	Maximum Calendar Week Average	Oct	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	19924	kg/day	Calendar Month Average	Nov	24-Hour Flow Composite	5 x Week	21
Nitrogen, Ammonia, Total (as N)	21	mg/L	Calendar Month Average	Nov	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	19924	kg/day	Maximum Calendar Week Average	Nov	24-Hour Flow Composite	5 x Week	21
Nitrogen, Ammonia, Total (as N)	21	mg/L	Maximum Calendar Week Average	Nov	24-Hour Flow Composite	5 x Week	20
Oxygen, Dissolved	Monitor Only	mg/L	Minimum Calendar Week Average	Oct-May	Grab	1 x Day	30
Oxygen, Dissolved	7.0	mg/L	Minimum Calendar Week Average	Jun-Sep	Grab	1 x Day	30

*Period: Limits Applicable in the Final Period*  
**SD 002, SD 003, SD 004, SD 005, SD 006, SD 007**

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
BOD, Carbonaceous 05 Day (20 Deg C)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	Grab	2 x Week	29
Flow	Monitor Only	MG	Calendar Month Total	Jan-Dec	Estimate	1 x Day	

*Period: Limits Applicable in the Final Period, Variability of Operation - See Notes for condition that applies*  
**SW 002**

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Oxygen, Dissolved	Monitor Only	mg/L	Daily Average	Nov-Apr	Grab	5 x Week	18

*Period: Limits Applicable in the Final Period*  
**WS 001**

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
BOD, Carbonaceous 05 Day (20 Deg C)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	5 x Week	6
BOD, Carbonaceous 05 Day (20 Deg C)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	5 x Week	
Cadmium, Total (as Cd)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
Chromium, Total (as Cr)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
Copper, Total (as Cu)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
Cyanide, Free (Amen To Chlorination)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	13
Cyanide, Total (as CN)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	14
Flow	Monitor Only	mgd	Calendar Month Average	Jan-Dec	Measurement, Continuous	1 x Day	9
Flow	Monitor Only	mgd	Calendar Month Maximum	Jan-Dec	Measurement, Continuous	1 x Day	
Flow	Monitor Only	MG	Calendar Month Total	Jan-Dec	Measurement, Continuous	1 x Day	
Lead, Total (as Pb)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	10
Mercury, Total (as Hg)	Monitor Only	ng/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Month	11
Nickel, Total (as Ni)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	1
Nitrogen, Ammonia, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	5 x Week	
PCBs (Polychlorinated biphenyls )	Monitor Only	ng/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	1
pH	Monitor Only	SU	Calendar Month Maximum	Jan-Dec	Measurement, Continuous	5 x Week	
pH	Monitor Only	SU	Calendar Month Minimum	Jan-Dec	Measurement, Continuous	5 x Week	12
Phosphorus, Dissolved	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	5 x Week	
Phosphorus, Total (as P)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	5 x Week	12
Solids, Total Suspended (TSS)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	5 x Week	
Solids, Total Suspended (TSS)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	5 x Week	12
Zinc, Total (as Zn)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	

Notes:

- 1 -- Analyze immediately.
- 2 -- Based on mean concentration. EPA Method 608. See Chapter 1 Section 8.7.
- 3 -- Based on mean of daily mass loadings. The Permittee is required to use EPA Method 1631, as revised by EPA, with Clean techniques method 1669 when monitoring the effluent for mercury. Should another mercury analytical method that has a reportable quantitation level that allows for low-level effluent characterization to be approved by the U.S. EPA and certified by the MN Department of Health, the Permittee is authorized to use that method.
- 4 -- Calculated by adding all of the monthly average values during the last twelve months, starting with the monthly average value for the month of the current reporting period, and dividing by twelve. Facilities with a new phosphorus limit shall, for the first 11 months that the limit is effective, indicate '(NR) <12 months' in place of a value for the 12 Month Average until the 12th month of monitoring.
- 5 -- Calculated by multiplying the total volume of effluent flow in million gallons (MG) by the monthly average concentration and by a 3.785 conversion factor.
- 6 -- EPA Method 213.2, 200.8.
- 7 -- EPA Method 218.2, 200.8.
- 8 -- EPA Method 220.2, 200.8.
- 9 -- EPA Method 239.2, 200.8.
- 10 -- EPA Method 245.7.
- 11 -- EPA Method 249.2, 200.8.
- 12 -- EPA Method 289.1, 200.8.
- 13 -- EPA Method 335.1.
- 14 -- EPA Method 335.2, 335.3.
- 15 -- EPA Method 608. See Chapter 1 Section 8.7.
- 16 -- Either continuous monitor or grab samples. Grab samples shall be taken as close to sunrise as practical.
- 17 -- If the DO measurement is 7.0 mg/L or greater as determined by previous samples from both the upstream and downstream stations. Either continuous monitor or grab samples. Grab samples shall be taken as close to sunrise as practical.
- 18 -- If the DO measurement is less than 7.0 mg/L as determined by previous samples from both the upstream and downstream stations. Either continuous monitor or grab samples. Grab samples shall be taken as close to sunrise as practical.
- 19 -- If the daily total residual chlorine sample exceeds 0.1 mg/L, the Permittee shall immediately investigate the cause, take appropriate remedial action and report the action and results on the monthly discharge monitoring report. If the Mississippi River elevation at the effluent sample building exceeds 696 feet MSL, to protect the integrity of the facility, the dechlorination facilities may be removed from service. During these periods, the total residual chlorine effluent limitation on page 8 and 14 of the limits and monitoring section of this permit and the first sentence of this special requirement shall not apply. The occurrence of this event shall be reported to the Agency Commissioner and described in the monthly discharge monitoring report.
- 20 -- If the monthly average river flow is < 5000 cfs.
- 21 -- If the monthly average river flow is < 5000 cfs. Mass calculated using a flow of 251 mgd.
- 22 -- If the monthly average river flow is > 5000 cfs.
- 23 -- If the monthly average river flow is > 5000 cfs. Mass calculated using a flow of 314 mgd.
- 24 -- If the monthly average river flow is > 5000 cfs. Mass calculated using a flow of 339 mgd.
- 25 -- If the weekly average river flow is < 5000 cfs. Mass calculated using a flow of 251 mgd.
- 26 -- Limit reflects the 12/19/08 phosphorus trade agreement, amended on 6/26/09 between the Permittee and the City of Princeton (NPDES/SDS Permit No. MN0024538.) This limit applies for the duration of the respective trade agreement. At the end of the term of the trade agreement, the Permittee's phosphorus discharge limit will return to the final limit effective prior to this permit modification, 433,798 kg/yr. For each month multiply the total volume of effluent flow (MG) by the monthly average concentration and by a 3.785 conversion factor to get kg/month. Then add all of the monthly values during the last 12 months, starting with the monthly total for the month of the current reporting period. Facilities with a new phosphorus limit shall, for the first 11 months that the limit is effective, indicate '(NR) <12 months' in place of a value for the 12 Month Average until the 12th month of monitoring.
- 27 -- Mass calculated using a flow of 314 mgd.
- 28 -- Mass calculated using a flow of 339 mgd.
- 29 -- Report total per event
- 30 -- See Chapter 1 Section 8.6.
- 31 -- The Permittee is required to use EPA Method 1631, as revised by EPA, with Clean techniques method 1669 when monitoring the effluent for mercury. Should another mercury analytical method that has a reportable quantitation level that allows for low-level effluent characterization to be approved by the U.S. EPA and certified by the MN Department of Health, the Permittee is authorized to use that method.
- 32 -- The estimation method uses the USGS gauge readings from the Minnesota River at Jordan and the Corps of Engineers flow readings from the Mississippi River at Lock and Dam No. 1. The estimated St. Paul flow is determined by adding the 24 hour daily average discharge from lock and Dam No. 1 to the daily average Jordan flow plus 5% with a one day lag  $[LD1 + \text{Jordan} * 1.05 \text{ (with a one-day lag)}]$ .

## Proposed Permit Effluent Limits

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The proposed effluent limits and monitoring requirements in the draft permit are presented below.

### Technology Based Effluent Limits

The TSS, pH, and percent removal limits are technology based effluent limits. These limits are specified in 40 CFR § 133.102 and Minn. R. 7053.0215.

### State Discharge Restriction

The fecal coliform bacteria limit is a State Discharge Restriction (SDR) as specified in Minn. R. 7053.0215, subp. 1.

### Water Quality Based Effluent Limits

*Background.* The discharge is located on the Mississippi River. This portion of the Mississippi River has a water classification of 2C, 3C, 4A, 4B, 5, and 6. The discharger has submitted seven chronic whole effluent toxicity (WET) tests and three priority pollutant scans since June 2006. The Average Dry Weather (ADW) design flow is used to calculate WQBELs under critical low flow stream conditions. The MPCA engineering staff used best professional judgment to determine an ADW for this Facility of 241 mgd. The low flow condition is defined by the once in 10 year weekly average flow ( $7Q_{10}$ ), which is determined to be 1,109.24 mgd (1,716 cubic feet per second (cfs)). The dilution ratio is 4.6:1, river low flow to effluent flow at the ADW. The analysis below is based on data submitted to date.

*WQBEL Limits.* The TRC limit is the final acute value for chlorine found in Minn. R. 7050.0222. This limit is protective of the use classification of the receiving water.

The concentration limitations for CBOD<sub>5</sub>, ammonia nitrogen, dissolved oxygen, mercury, PCB's, and total phosphorus were developed based on receiving water conditions.

A total phosphorous WQBEL was developed for this Facility as part of the draft Metropolitan Council Environmental Services (MCES) System-Wide Phosphorous NPDES/SDS Permit No. MN0070629. The draft MCES Total Phosphorous Permit establishes a total phosphorous WQBEL for five MCES owned and operated facilities (Seneca WWTP, Metropolitan WWTP, Empire WWTP, Eagles Point WWTP, and Hastings WWTP). The total phosphorous WQBEL was developed by determining the loading reductions required to achieve both current (Wisconsin) and proposed eutrophication standards for the Mississippi River and Lake Pepin. Additional information on the development of the total phosphorous WQBEL and the draft MCES Total Phosphorous NPDES/SDS Permit (MN0070629) can be found in the MCES Total Phosphorous NPDES/SDS Permit and the associated factsheet.

Limits for mercury and PCBs were based on applying the water quality standard directly to the effluent as a waste load allocation, and then determining the permit limits based on the expected variability of the mercury and PCB in the effluent. The final effluent limitations for these pollutants are such that the discharge will not "cause or contribute" to water quality standards violations based on EPA policy established July 13, 2000 (65 FR 43642).

*Reasonable Potential analysis for Chemical Specific Pollutants (40 CFR § 122.44(d)(1)).* Federal regulations require the MPCA to evaluate the discharge to determine whether it has a reasonable potential (RP) to cause or contribute to a violation of water quality standards (WQS). The MPCA must use acceptable technical procedures, accounting for variability (coefficient of variation, or CV), when

determining whether the effluent causes, has the RP to cause, or contribute to an excursion of an applicable WQS. Projected effluent quality (PEQ) derived from effluent monitoring data is compared to Preliminary Effluent Limits (PELs) determined from mass balance inputs. Both determinations account for effluent variability. Where PEQ exceeds the PEL, there is RP to cause or contribute to a WQS excursion. When RP is indicated, the permit must contain a WQBEL for that pollutant.

The priority pollutant scan information of the effluent was evaluated using RP procedures. All but di-ethylhexyl phthalate (DEPH), total phenol, and methylene chloride of the organic priority pollutants were below the level of detection. Since these pollutants were at low enough levels not to be detected, RP to cause or contribute to a WQS excursion is not indicated. DEPH was detectable, although it is likely that the DEPH samples are the result of contamination. There was only one detectable concentration found for methylene chloride, total thallium, and total phenol. MPCA does not perform an RP analysis based off one detectable sample.

From the table below, silver, arsenic, chromium valance +6, chromium valence +3, copper, chloroform, lead, nickel, antimony, selenium, zinc and perfluorooctane sulfonate (PFOS) indicated no RP to cause or contribute to an excursion above the applicable WQS. DEPH did indicate RP.

The following table contains the inputs to the RP analysis for total silver, total arsenic, chromium valance +6, chromium valence +3, total copper, chloroform, total lead, total nickel, total antimony, total selenium, total zinc, DEPH and PFOS. Please note the chromium valance +6 and the chromium valence +3 analyses are based on total chromium data. The analysis is made with effluent data that is expressed as total metal. These pollutants were evaluated on the basis of analytical measurements that made evident the need for a full determination.



Parameter	Ag (ug/L)	As (ug/L)	Cr6 (ug/L)	Cr3 (ug/L)	Cu (ug/L)	Chloroform (ug/L)	Pb (ug/L)	Ni (ug/L)	Sb (ug/L)
Max Measured Value	0.2	1.8	3.3	3.3	15.1	29.8	8	20.2	1.2
# data points	10	10	106	106	106	9	106	106	10
PEQ	0.34	2.34	2.838	2.838	14.043	53.64	6.88	18.382	1.56
Plant flow ADW (mgd)	241	241	241	241	241	241	241	241	241
Rec. water flow, 7Q10(mgd)	1109.2437	1109.2437	1109.2437	1109.2437	1109.2437	1109.2437	1109.2437	1109.2437	1109.2437
Background Conc.	0	1.5	0.9	0	1.9	0	0.8	2.2	0
Continuous Std (cs) 216 ppm hard	1.00	53.00	11.00	388.91	15.84	155.00	8.48	302.47	31.00
Maximum Std (ms) 216 ppm hard	7.61	360.00	16.00	3262.84	36.62	1392.00	217.62	2720.81	90.00
Final Acute Value (FAV) 276 ppm hard	23	720	32	7967	92	2784	596	6695	180
Mass Balance - cs	5.60	290.04	57.49	2178.95	80.01	868.41	43.83	1684.52	173.68
Mass Balance - ms	42.65	2010.06	85.50	18280.61	196.42	7798.92	1215.55	15233.69	504.24
Coeff of Variation (CV)	0.64860	0.30180	0.60000	0.60000	0.24900	0.60000	0.60000	0.32340	0.26180
Long Term Avg-cs	2.82	255.55	30.32	1149.23	60.43	458.02	23.12	1174.48	129.35
Long Term Avg-ms	12.81	1056.43	27.45	5869.82	114.41	2504.20	390.31	7687.45	286.36
Preliminary Effl limits:									
Daily Max	9.40	486.24	85.50	3579.09	103.76	1426.44	71.99	2327.39	227.77
Monthly Ave (2x/month)	5.26	353.67	49.35	2065.95	79.33	823.38	41.56	1659.66	172.03
<u>Reasonable Potential</u>									
PEQ>Daily max	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
PEQ>Monthly Ave.	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
PEQ> FAV	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Final Reasonable Potential	No	No	No	No	No	No	No	No	No

All chronic WET testing results had <1.0 Tuc for all the species. As such there is no reasonable potential for a chronic WET limit

Background data for non PFC parameters from 2004 RP analysis

PFC background concs: From 2010 RP analysis. PFOS and PFOA based on converting all non detect data equal the non detect actual value.

PFBA median background based on actual measured data. See 2010 RP analysis.

Cr+3 and Cr+6 analysis is based on total chromium. ! EAO staff do not recommend DEPH WQBELS

Parameter	Se (ug/L)	Zn(ug/L)	DEPH (ug/L)	PFOS (ng/L)	PFOA (ug/L)
Max Measured Value	5.8	89	17.62	25.3	0.067
# data points	10	106	7	7	7
PEQ	9.86	83.66	19.382	50.6	0.134
Plant flow ADW (mgd)	241	241	241	241	241
Rec. water flow, 7Q10(mgd)	1109.2437	1109.2437	1109.243697	1109.243697	1109.243697
Background Conc.	0	4.15	0	5.08*	0.00254*
Continuous Std (cs) 216 ppm hard	5.00	203.56	2.10	14.00	2.70
Maximum Std (ms) 216 ppm hard	20.00	224.72	NA	85,000	15,346
Final Acute Value (FAV) 276 ppm hard	40	553	NA	170,000	30,692
Mass Balance -cs	28.01	1121.39	11.77	55.06	15.12
Mass Balance -ms	112.05	1239.95	#VALUE!	476203.65	85978.58
Coeff of Variation (CV)	0.59840	0.20010	0.60000	0.60000	0.60000
Long Term Avg-cs	14.80	893.67	9.18	42.96	11.79
Long Term Avg-ms	36.06	797.63	#VALUE!	152906.80	27607.33
Preliminary Effl limits:					
Daily Max	45.98	1239.95	28.59	133.79	36.73
Monthly Ave (2x/month)	26.57	995.43	16.50	77.23	21.20
<u>Reasonable Potential</u>					
PEQ>Daily max	FALSE	FALSE	FALSE	FALSE	FALSE
PEQ>Monthly Ave.	FALSE	FALSE	TRUE	FALSE	FALSE
PEQ> FAV	FALSE	FALSE	FALSE	FALSE	FALSE
Final Reasonable Potential	No	No	Yes	No	No

All chronic WET testing results had <1.0 Tuc for all the species. As such there is no reasonable potential for a chronic WET limit

Background data for non PFC parameters from 2004 RP analysis

\*PFC background concs: From 2010 RP analysis. PFOS and PFOA based on converting all non detect data equal the non detect actual value.

\*PFBA median background based on actual measured data. See 2010 RP analysis.

Cr+3 and Cr+6 analysis is based on total chromium. ! EAO staff do not recommend DEPH WQBELs

All free Cyanide data was less than detect, no reasonable potential analysis could be done.

Cadmium, all but one data point was less than detection, no reasonable potential could be done

Parameter	PFBA (ug/L)
Max Measured Value	0.29
# data points	7
PEQ	0.58
Plant flow ADW (mgd)	241
Rec. water flow, 7Q10(mgd)	1109.2437
Background Conc.	0.00487*
Continuous Std (cs) 216 ppm hard	1000.00
Maximum Std (ms) 216 ppm hard	8,500
Final Acute Value (FAV) 276 ppm hard	17,000
Mass Balance -cs	5602.65
Mass Balance -ms	47622.68
Coeff of Variation (CV)	0.60000
Long Term Avg-cs	2954.98
Long Term Avg-ms	15291.42
Preliminary Effl limits:	
Daily Max	9202.80
Monthly Ave (2x/month)	5312.11
<u>Reasonable Potential</u>	
PEQ>Daily max	FALSE
PEQ>Monthly Ave.	FALSE
PEQ> FAV	FALSE
Final Reasonable Potential	No

All chronic WET testing results had <1.0 Tuc for all the species. As such there is no reasonable potential for a chronic WET limit

Background data for non PFC parameters from 2004 RP analysis

\*PFC background concs: From 2010 RP analysis. PFOS and PFOA based on converting all non detect data equal the non detect actual value.

\*PFBA median background based on actual measured data. See 2010 RP analysis.

Cr+3 and Cr+6 analysis is based on total chromium. ! EAO staff do not recommend DEPH WQBELs

All free Cyanide data was less than detect, no reasonable potential analysis could be done.

Cadmium, all but one data point was less than detection, no reasonable potential could be done

**RP Conclusions for DEPH.** RP to cause or contribute to the excursion above a WQS has been indicated for DEPH. MPCA does not recommend a WQBEL for DEPH at this Facility. The RP conclusion for DEPH is based on one high observation. DEPH is often a lab contaminate associated with cleaning of lab equipment. MCES will complete 10 priority pollutant scans throughout the permit term resulting in 10 DEPH samples that the MPCA will use to complete a RP analysis at the next permit reissuance.

*RP Conclusions for PFOS, PFOA and PFBA.* Starting in April 2009, the MPCA took effluent samples from facilities discharging into the lower Minnesota River and those discharging into Pool 2 of the Mississippi River. Each sample was analyzed for 13 forms of perfluorochemicals (PFCs). Two separate sampling events were completed for these dischargers. Since that time, the Facility has monitored for PFOS and has made efforts to reduce PFCs coming into their Facility. As shown above, the RP analysis is based off of the PFOS samples taken in January 2013. As illustrated above, there is no RP to cause or contribute to an exceedence of the site specific Water Quality Criterion (WQC) for PFOS. As such, no PFOS WQBEL was assigned to this discharge.

A RP analysis was also done for the site specific WQC perfluorooctanoate (PFOA) and for the site specific WQC perfluorobutanoate (PFBA). This was also based on January 2013 data. No RP has been found to cause or contribute to either the PFOA site specific WQC nor the PFBA site specific WQC. MPCA staff recommends quarterly effluent sampling for all 13 forms of PFCs shown in in Table 1 and in the guidance document 'Guidance for Perfluorochemicals Analysis', May 2010 found on the MPCA website.

#### **Reporting Levels of the Thirteen PFCs of Interest.**

<b>Target Analyte</b>	<b>Acronym</b>	<b>Aqueous Report Levels (ng/L)</b>
Perfluorobutanoate	PFBA	2.50
Perfluoropentanoate	PFPeA	2.50
Perfluorohexanoate	PFHxA	2.50
Perfluoroheptanoate	PFHpA	2.50
Perfluorooctanoate	PFOA	2.50
Perfluorononanoate	PFNA	2.50
Perfluorodecanoate	PFDA	2.50
Perfluoroundecanoate	PFUnA	2.50
Perfluorododecanoate	PFDoA	2.50
Perfluorobutanesulfonate	PFBS	5.00
Perfluorohexanesulfonate	PFHxS	5.00
Perfluorooctanesulfonate	PFOS	5.00
Perfluorooctanesulfonamide	PFOSA	2.50

*Discontinue Monitoring of Several Pollutant Parameters.* The MPCA has discontinued sampling requirements for total cadmium, total chromium, total copper, total lead, total nickel and total zinc. The RP analysis indicated no RP for these metals.

*Chronic Whole Effluent Toxicity Testing.* There were seven chronic WET tests performed at this Facility since June 2006. All seven tests had less than 1.0 toxic unit chronic (TUC) for all the species tested. As such, there is no RP to establish a chronic WET limit at this Facility. Because no RP was found, a monitoring threshold value of 5.6 TUC has been established. The 5.6 TUC is a monitoring threshold value, not a WET limit. The permit includes annual chronic WET sampling. If the monitoring threshold value of 5.6 TUC is exceeded for any one WET test, the Facility will perform two WET retests to determine if a Toxicity Reduction Evaluation (TRE) is needed.

## Proposed Limits and Monitoring Requirements

SD 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Bicarbonates (HCO <sub>3</sub> )	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	22
BOD, Carbonaceous 05 Day (20 Deg C)	28486	kg/day	Calendar Month Average	Oct-May	24-Hour Flow Composite	5 x Week	7
BOD, Carbonaceous 05 Day (20 Deg C)	24	mg/L	Calendar Month Average	Oct-May	24-Hour Flow Composite	5 x Week	8
BOD, Carbonaceous 05 Day (20 Deg C)	51257	kg/day	Maximum Calendar Week Average	Oct-May	24-Hour Flow Composite	5 x Week	
BOD, Carbonaceous 05 Day (20 Deg C)	40	mg/L	Maximum Calendar Week Average	Oct-May	24-Hour Flow Composite	5 x Week	
BOD, Carbonaceous 05 Day (20 Deg C) Percent Removal	85	%	Minimum Calendar Month Average	Jan-Dec	Calculation	5 x Week	
Calcium, Total (as Ca)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	22
Chloride, Total	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	22
Chlorine, Total Residual	0.038	mg/L	Daily Maximum	Apr-Oct	Grab	1 x Day	11
Cyanide, Free (as CN)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	Grab	1 x Week	9
Cyanide, Total (as CN)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	Grab	1 x Week	9
Fecal Coliform, MPN or Membrane Filter 44.5C	200	#100ml	Calendar Month Geometric Mean	Apr-Oct	Grab	5 x Week	9
Flow	Monitor Only	mgd	Calendar Month Average	Jan-Dec	Measurement, Continuous	1 x Day	6
Flow	Monitor Only	mgd	Calendar Month Maximum	Jan-Dec	Measurement, Continuous	1 x Day	6
Flow	Monitor Only	MG	Calendar Month Total	Jan-Dec	Measurement, Continuous	1 x Day	6
Hardness, Calcium & Magnesium, Calculated (as CaCO <sub>3</sub> )	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	22
Magnesium, Total (as Mg)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	22
Mercury, Dissolved (as Hg)	Monitor Only	ng/L	Calendar Month Average	Jan, Mar, May, Jul, Sep, Nov	Grab	2 x Month	21
Mercury, Dissolved (as Hg)	Monitor Only	ng/L	Daily Maximum	Jan, Mar, May, Jul, Sep, Nov	Grab	2 x Month	21
Mercury, Total (as Hg)	0.0085	kg/day	Calendar Month Average	Jan, Mar, May, Jul, Sep, Nov	Grab	2 x Month	21
Mercury, Total (as Hg)	9	ng/L	Calendar Month Average	Jan, Mar, May, Jul, Sep, Nov	Grab	2 x Month	21
Mercury, Total (as Hg)	14	ng/L	Daily Maximum	Jan, Mar, May, Jul, Sep, Nov	Grab	2 x Month	21
Nitrite Plus Nitrate, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Month	
Nitrogen, Ammonia, Total (as N)	Monitor Only	kg/day	Calendar Month Average	Dec-Apr	24-Hour Flow Composite	5 x Week	
Nitrogen, Ammonia, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Dec-Apr	24-Hour Flow Composite	5 x Week	
Nitrogen, Ammonia, Total (as N)	Monitor Only	kg/day	Maximum Calendar Week Average	Dec-Apr	24-Hour Flow Composite	5 x Week	
Nitrogen, Ammonia, Total (as N)	Monitor Only	mg/L	Maximum Calendar Week Average	Dec-Apr	24-Hour Flow Composite	5 x Week	
Nitrogen, Kjeldahl, Total	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Month	

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Nitrogen, Nitrate, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Nitrogen, Nitrite, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Nitrogen, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Month	18
Oxygen, Dissolved	Monitor Only	mg/L	Minimum Calendar Week Average	Oct-May	Grab	1 x Day	9
PCBs (Polychlorinated biphenyls)	0.039	gr/day	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	4
PCBs (Polychlorinated biphenyls)	0.041	ng/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	3
PCBs (Polychlorinated biphenyls)	0.07	ng/L	Daily Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	4
PFBA (perfluorobutanoic acid)	Monitor Only	ng/L	Calendar Quarter Average	Jan-Dec	Grab	1 x Quarter	10
PFBA (perfluorobutanoic acid)	Monitor Only	mg/day	Daily Maximum	Jan-Dec	Grab	1 x Quarter	10
PFHxS (perfluorohexane sulfonate)	Monitor Only	ng/L	Calendar Quarter Average	Jan-Dec	Grab	1 x Quarter	10
PFHxS (perfluorohexane sulfonate)	Monitor Only	mg/day	Daily Maximum	Jan-Dec	Grab	1 x Quarter	10
PFOA (perfluorooctanoic acid)	Monitor Only	ng/L	Calendar Quarter Average	Jan-Dec	Grab	1 x Quarter	10
PFOA (perfluorooctanoic acid)	Monitor Only	mg/day	Daily Maximum	Jan-Dec	Grab	1 x Quarter	10
PFOS (perfluorooctane sulfonate)	Monitor Only	ng/L	Calendar Quarter Average	Jan-Dec	Grab	1 x Quarter	10
PFOS (perfluorooctane sulfonate)	Monitor Only	mg/day	Daily Maximum	Jan-Dec	Grab	1 x Quarter	10
pH	9.0	SU	Calendar Month Maximum	Jan-Dec	Grab	5 x Week	2
pH	6.0	SU	Calendar Month Minimum	Jan-Dec	Grab	5 x Week	2
Phosphorus, Dissolved	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Phosphorus, Total (as P)	1.0	mg/L	12 Month Moving Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Phosphorus, Total (as P)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Phosphorus, Total (as P)	Monitor Only	kg/mo	Calendar Month Total	Jan-Dec	24-Hour Flow Composite	1 x Week	
Potassium, Total (as K)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	22
Sodium, Total (as Na)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	22
Solids, Total Dissolved (TDS)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	22
Solids, Total Suspended (TSS)	35608	kg/day	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	5 x Week	7
Solids, Total Suspended (TSS)	30	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	5 x Week	
Solids, Total Suspended (TSS)	57664	kg/day	Maximum Calendar Week Average	Jan-Dec	24-Hour Flow Composite	5 x Week	8
Solids, Total Suspended (TSS)	45	mg/L	Maximum Calendar Week Average	Jan-Dec	24-Hour Flow Composite	5 x Week	

## SD 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Solids, Total Suspended (TSS) Percent Removal	85	%	Minimum Calendar Month Average	Jan-Dec	Calculation	5 x Week	
Solids, Total Suspended (TSS), grab (Mercury)	Monitor Only	mg/L	Calendar Month Average	Jan, Mar, May, Jul, Sep, Nov	Grab	2 x Month	21
Solids, Total Suspended (TSS), grab (Mercury)	Monitor Only	mg/L	Daily Maximum	Jan, Mar, May, Jul, Sep, Nov	Grab	2 x Month	21
Specific Conductance	Monitor Only	umh/cm	Calendar Month Maximum	Jan-Dec	Measurement	1 x Month	22
Sulfate, Total (as SO4)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	22

Period: Limits Applicable in the Final Period, Variability of Operation - Conditional Limits (Secondary)

## SD 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
BOD, Carbonaceous 05 Day (20 Deg C)	16617	kg/day	Calendar Month Average	Jun	24-Hour Flow Composite	5 x Week	20
BOD, Carbonaceous 05 Day (20 Deg C)	14	mg/L	Calendar Month Average	Jun	24-Hour Flow Composite	5 x Week	20
BOD, Carbonaceous 05 Day (20 Deg C)	26909	kg/day	Maximum Calendar Week Average	Jun	24-Hour Flow Composite	5 x Week	20
BOD, Carbonaceous 05 Day (20 Deg C)	21	mg/L	Maximum Calendar Week Average	Jun	24-Hour Flow Composite	5 x Week	20
BOD, Carbonaceous 05 Day (20 Deg C)	11869	kg/day	Calendar Month Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20
BOD, Carbonaceous 05 Day (20 Deg C)	10	mg/L	Calendar Month Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20
BOD, Carbonaceous 05 Day (20 Deg C)	19221	kg/day	Maximum Calendar Week Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20
BOD, Carbonaceous 05 Day (20 Deg C)	15	mg/L	Maximum Calendar Week Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	15430	kg/day	Calendar Month Average	May	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	13	mg/L	Calendar Month Average	May	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	23145	kg/day	Maximum Calendar Week Average	May	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	19.5	mg/L	Maximum Calendar Week Average	May	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	9495	kg/day	Calendar Month Average	Jun	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	8	mg/L	Calendar Month Average	Jun	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	15377	kg/day	Maximum Calendar Week Average	Jun	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	12	mg/L	Maximum Calendar Week Average	Jun	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	5935	kg/day	Calendar Month Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	5.0	mg/L	Calendar Month Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	9611	kg/day	Maximum Calendar Week Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20



Period: Limits Applicable in the Final Period, Variability of Operation - Conditional Limits (Secondary)  
SD 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Nitrogen, Ammonia, Total (as N)	7.5	mg/L	Maximum Calendar Week Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	10682	kg/day	Calendar Month Average	Oct	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	9.0	mg/L	Calendar Month Average	Oct	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	17299	kg/day	Maximum Calendar Week Average	Oct	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	13.5	mg/L	Maximum Calendar Week Average	Oct	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	24925	kg/day	Calendar Month Average	Nov	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	21	mg/L	Calendar Month Average	Nov	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	40365	kg/day	Maximum Calendar Week Average	Nov	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	31.5	mg/L	Maximum Calendar Week Average	Nov	24-Hour Flow Composite	5 x Week	20
Oxygen, Dissolved	Monitor Only	mg/L	Minimum Calendar Week Average	Jun-Sep	Grab	1 x Day	19

Period: Limits Applicable in the Final Period, Variability of Operation - Conditional Limits (Tertiary)  
SD 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
BOD, Carbonaceous 05 Day (20 Deg C)	13283	kg/day	Calendar Month Average	Jun	24-Hour Flow Composite	5 x Week	20
BOD, Carbonaceous 05 Day (20 Deg C)	14	mg/L	Calendar Month Average	Jun	24-Hour Flow Composite	5 x Week	20
BOD, Carbonaceous 05 Day (20 Deg C)	19924	kg/day	Maximum Calendar Week Average	Jun	24-Hour Flow Composite	5 x Week	20
BOD, Carbonaceous 05 Day (20 Deg C)	21	mg/L	Maximum Calendar Week Average	Jun	24-Hour Flow Composite	5 x Week	20
BOD, Carbonaceous 05 Day (20 Deg C)	9488	kg/day	Calendar Month Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20
BOD, Carbonaceous 05 Day (20 Deg C)	10	mg/L	Calendar Month Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20
BOD, Carbonaceous 05 Day (20 Deg C)	14232	kg/day	Maximum Calendar Week Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20
BOD, Carbonaceous 05 Day (20 Deg C)	15	mg/L	Maximum Calendar Week Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	12334	kg/day	Calendar Month Average	May	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	13	mg/L	Calendar Month Average	May	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	18501	kg/day	Maximum Calendar Week Average	May	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	19.5	mg/L	Maximum Calendar Week Average	May	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	7590	kg/day	Calendar Month Average	Jun	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	8	mg/L	Calendar Month Average	Jun	24-Hour Flow Composite	5 x Week	20

Period: Limits Applicable in the Final Period, Variability of Operation - Conditional Limits (Tertiary)

SD 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Nitrogen, Ammonia, Total (as N)	11385	kg/day	Maximum Calendar Week Average	Jun	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	12	mg/L	Maximum Calendar Week Average	Jun	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	4744	kg/day	Calendar Month Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	5.0	mg/L	Calendar Month Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	7116	kg/day	Maximum Calendar Week Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	7.5	mg/L	Maximum Calendar Week Average	Jul-Sep	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	8539	kg/day	Calendar Month Average	Oct	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	9.0	mg/L	Calendar Month Average	Oct	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	12809	kg/day	Maximum Calendar Week Average	Oct	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	13.5	mg/L	Maximum Calendar Week Average	Oct	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	19924	kg/day	Calendar Month Average	Nov	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	21	mg/L	Calendar Month Average	Nov	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	29887	kg/day	Maximum Calendar Week Average	Nov	24-Hour Flow Composite	5 x Week	20
Nitrogen, Ammonia, Total (as N)	31.5	mg/L	Maximum Calendar Week Average	Nov	24-Hour Flow Composite	5 x Week	20
Oxygen, Dissolved	7	mg/L	Minimum Calendar Month Average	Jun-Sep	Grab	1 x Day	19

Period: Limits Applicable in the Final Period

SD 008, SD 009

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
BOD, Carbonaceous 05 Day (20 Deg C)	25	mg/L	Calendar Year Average Intervention	Jan-Dec	Grab	1 x Year	17
Solids, Total Suspended (TSS)	100	mg/L	Calendar Year Average Intervention	Jan-Dec	Grab	1 x Year	17

SW 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Flow, Stream, Instantaneous	Monitor Only	cfs	Calendar Month Average	Jan-Dec	Estimate	1 x Month	13
Oxygen, Dissolved	Monitor Only	mg/L	Daily Average	May-Oct	Grab	5 x Week	5

Period: Limits Applicable in the Final Period, Variability of Operation - See Notes for condition that applies  
SW 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Oxygen, Dissolved	Monitor Only	mg/L	Daily Average	Nov-Apr	Grab	1 x Week	14

Period: Limits Applicable in the Final Period, Variability of Operation - See Notes for condition that applies  
SW 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Oxygen, Dissolved	Monitor Only	mg/L	Daily Average	Nov-Apr	Grab	5 x Week	14

Period: Limits Applicable in the Final Period  
SW 002

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Oxygen, Dissolved	Monitor Only	mg/L	Daily Average	May-Oct	Grab	5 x Week	12

Period: Limits Applicable in the Final Period, Variability of Operation - See Notes for condition that applies  
SW 002

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Oxygen, Dissolved	Monitor Only	mg/L	Daily Average	Nov-Apr	Grab	1 x Week	15

Period: Limits Applicable in the Final Period, Variability of Operation - See Notes for condition that applies  
SW 002

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Oxygen, Dissolved	Monitor Only	mg/L	Daily Average	Nov-Apr	Grab	5 x Week	15

Period: Limits Applicable in the Final Period  
SW 003

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Oxygen, Dissolved	Monitor Only	mg/L	Daily Average	May-Oct	Grab	5 x Week	16

Period: Limits Applicable in the Final Period, Variability of Operation - See Notes for condition that applies  
SW 003

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Oxygen, Dissolved	Monitor Only	mg/L	Daily Average	Nov-Apr	Grab	1 x Week	15

Period: Limits Applicable in the Final Period, Variability of Operation - See Notes for condition that applies  
SW 003

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Oxygen, Dissolved	Monitor Only	mg/L	Daily Average	Nov-Apr	Grab	5 x Week	15

Period: Limits Applicable in the Final Period  
WS 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
BOD, Carbonaceous 05 Day (20 Deg C)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	5 x Week	
BOD, Carbonaceous 05 Day (20 Deg C)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	5 x Week	
Cyanide, Free (as CN)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Cyanide, Total (as CN)	Monitor Only	ug/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Mercury, Total (as Hg)	Monitor Only	ng/L	Calendar Month Average	Jan, Mar, May, Jul, Sep, Nov	Grab	2 x Month	23
Nitrite Plus Nitrate, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Month	
Nitrogen, Ammonia, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	5 x Week	
Nitrogen, Kjeldahl, Total	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Month	
Nitrogen, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Month	18
PCBs (Polychlorinated biphenyls)	Monitor Only	ng/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
pH	Monitor Only	SU	Calendar Month Maximum	Jan-Dec	Measurement, Continuous	5 x Week	1
pH	Monitor Only	SU	Calendar Month Minimum	Jan-Dec	Measurement, Continuous	5 x Week	1
Phosphorus, Dissolved	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Phosphorus, Total (as P)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Solids, Total Suspended (TSS)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	5 x Week	
Solids, Total Suspended (TSS)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	5 x Week	

Notes:

- 1 – Analyze immediately.
- 2 – Analyze immediately. See Chapter 2, Section 2.1 for sampling and reporting information.
- 3 – Based on mean concentration. EPA Method 608. See Chapter 2, section 7.6.
- 4 – EPA Method 608. See Chapter 2, section 7.6.
- 5 – Either continuous monitor or grab samples. Grab samples shall be taken as close to sunrise as practical.
- 6 – Flow measurement shall be taken at the influent flow station and reported on the SD001 discharge monitoring reports. An effluent flow measurement device does not need to be installed at this time.
- 7 – Mass limit calculated using a flow of 314 mgd.
- 8 – Mass limit calculated using a flow of 339 mgd.
- 9 – See Chapter 2, Section 2.1 for sampling and reporting information.
- 10 – See Chapter 2, Sections 2.1 and 7.1-7.3 for sampling and reporting information.  
See MPCA Guidance for Perfluorochlorinated Analysis at the MPCA Quality System webpage.
- 11 – See Chapter 2, sections 2.1 and 8.10 for sampling and reporting information.
- 12 – See Chapter 3, section 2. Either continuous monitor or grab samples. Grab samples shall be taken as close to sunrise as practical.
- 13 – See Chapter 3, section 3.1 for reporting information.
- 14 – See Chapter 3, section 4.1. Either continuous monitor or grab samples. Grab samples shall be taken as close to sunrise as practical.
- 15 – See Chapter 3, sections 2 and 4. Either continuous monitor or grab samples. Grab samples shall be taken as close to sunrise as practical.
- 16 – See Chapter 3, sections 2. Either continuous monitor or grab samples. Grab samples shall be taken as close to sunrise as practical.
- 17 – See Chapter 7 Section 1.5, Chapter 11 Section 7, and Chapter 12 Section 1.16 for requirements regarding the benchmark monitoring requirements.  
An annual sample is required to be collected and the calendar year average must be reported on the December eDMR.
- 18 – See Chapter 7, Section 1.50 for additional information.
- 19 – See Surface Discharge Stations Chapter 2, Sections 2.1 and 5 for additional information.
- 20 – See Surface Discharge Stations Chapter 2, section 5 for additional information.
- 21 – See Surface Discharge Stations Chapter 2, sections 2.1 and 6 for additional information.
- 22 – See Surface Discharge Stations Chapter 2, sections 7.4 and 7.5 for additional information.
- 23 – See Waste Stream Stations Chapter 1, Section 3 for additional information.

## Additional Requirements

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### MCES System-Wide Total Phosphorous Permit

In addition to this permit, the Met Council – Mississippi Basin Total Phosphorus Permit (MN0070629) applies to phosphorus discharges from this Facility. The Met Council – Mississippi Basin Total Phosphorus Permit includes the combined TP WQBEL for five MCES owned and operated wastewater treatment plants (WWTPs) located within the Mississippi River Basin and Lake Pepin Watershed (Eagles Point WWTP, Empire WWTP, Hastings WWTP, Metropolitan WWTP, Seneca WWTP). Individual NPDES/SDS permits for the respective Met Council WWTPs contain the individual concentration-based limits and mass reporting requirements, as applicable, while the Met Council – Mississippi Basin Total Phosphorus Permit includes the aggregate mass-based limit and reporting requirements.

### Surface Water Monitoring

Background information: This Information Protocol addresses surface water station monitoring requirements for the Facility located along the Mississippi River downstream of downtown St. Paul. Dissolved Oxygen (DO) and stream flow are reported for three surface water monitoring stations (SW001, SW002 and SW003) located upstream and downstream of the Facility.

Information Goal: The objective of the monitoring of DO is to determine if the discharge from the Facility is causing or contributing to an excursion of the WQS of 7 mg/L for DO.

Information utilization: The DO concentrations in the Mississippi River reported for surface water stations SW001, SW002 and SW003 will be used by the Facility operator to determine the amount of aeration of the discharge that would be necessary to achieve compliance with the DO standard in the receiving water. When the daily average DO concentrations are less than 5.5 mg/L for SW002/SW003 or less than 6.0 mg/L for SW001 for two consecutive sample days **AND** the daily average daily flow is less

than or equal to 7,000 cubic feet per second as determined by the United States Geological Survey (USGS) estimation method, then the effluent shall comply with a DO effluent limitation of 7.0 mg/L.

Variables to be analyzed and sampling frequency: DO and stream flow will be monitored at SW001, SW002, and SW003 in accordance with the following guidelines:

**Sampling Protocol for SW001, SW002, SW003---MCES Metropolitan WWTF**

Parameter	Units	Limit	Effective Period	Frequency	Notes
<b>SW001</b>					
Flow	CFS	Monitor only	Jan-Dec	1 x month	USGS estimation method—see note 32 in Limits and Monitoring Requirements
DO	Mg/L	Monitor only	May-Oct	5 x week	Grab samples (collect early AM) or continuous
DO	Mg/L	Monitor only	Nov-Apr	1 x week	DO $\geq$ 7 mg/L for SW001 and SW002
DO	Mg/L	Monitor only	Nov-Apr	5 x week	DO < 7 mg/L for SW001 and SW002
<b>SW002</b>					
DO	Mg/L	Monitor only	May-Oct	5 x week	Grab samples (collect early AM) or continuous
DO	Mg/L	Monitor only	Nov-Apr	1 x week	DO $\geq$ 7 mg/L for SW001 and SW002
DO	Mg/L	Monitor only	Nov-Apr	5 x week	DO < 7 mg/L for SW001 and SW002
<b>SW003</b>					
DO	Mg/L	Monitor only	May-Oct	5 x week	Grab samples (collect early AM) or continuous
DO	Mg/L	Monitor only	Nov-Apr	1 x week	DO $\geq$ 7 mg/L for SW001 and SW002
DO	Mg/L	Monitor only	Nov-Apr	5 x week	DO < 7 mg/L for SW001 and SW002



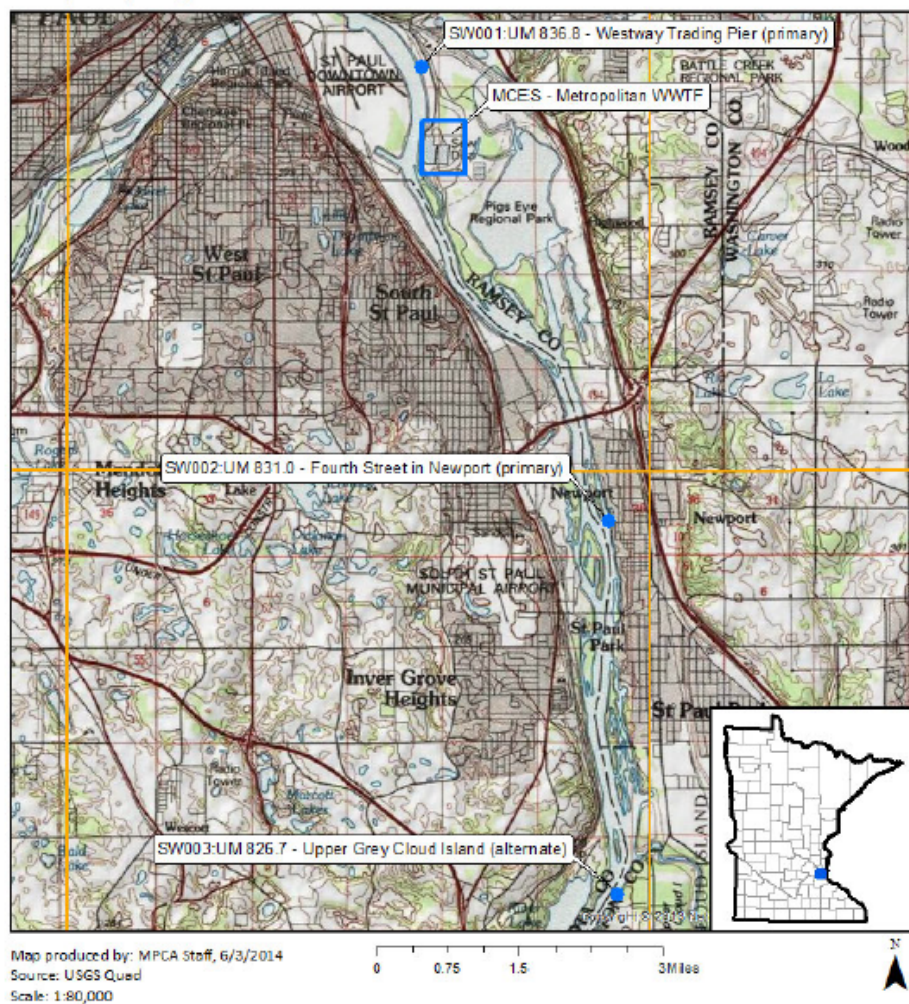
Sample locations: The locations of SW001, SW002 and SW003 can be defined on the basis of the Upper Mississippi (UM) River mile. SW001 is located at UM 836.8. SW002 is located at UM 826.7 and SW003 is located at UM 831.0. The location of the SW monitoring stations is shown in the map below.

**Topographic Map of Permitted Facility - Surface Water Monitoring Locations**

MN0029815: MCES - Metropolitan Wastewater Treatment Facility

T28N, R22W, Section 9

St. Paul, Ramsey County, Minnesota



Data Collection: The flow data are based on an estimation method that uses the USGS gauge readings from the Minnesota River at Jordan and the Corps of Engineers flow readings from the Mississippi River at Lock and Dam No. 1. The estimated St. Paul flow is determined by adding the 24 hour daily average discharge from Lock and Dam No. 1 to the daily average Jordan flow plus 5% with a one day lag. [LD1 + Jordan \* 1.05 (with a one-day lag)].

Data Handling and Reporting Format: The location, date, and time that each sample is taken along with the sample results shall be recorded on the supplemental Discharge Monitoring Report (DMR) form and submitted to the MPCA with each DMR preprint form. MPCA staff will be responsible for entering the data into the Water Quality Delta database and reviewing the supplemental DMR forms and entering the data into a computer spreadsheet.



**Biosolids**

Primary and secondary biosolids are thickened with 6 gravity and 16 floatation thickeners. The thickened sludge is held in eight biosolids storage tanks, then blended and conditioned with alum and polymer, and dewatered with centrifuges (8 total) prior to incineration on-site in three identically equipped Fluidized Bed Reactors (FBR's). On-site incineration of biosolids is authorized by Air Emissions Permit No. 12300053. Solid waste disposal of biosolids is authorized by this permit, if necessary, as determined by the Permittee. Scum, grit, screenings and incineration ash are disposed of off-site as solid waste.

**Compliance Schedules**

The permit does not include a compliance schedule.

**Industrial Stormwater – Sector T: Treatment Works**

On April 5, 2010, the Industrial Stormwater General Permit (MNR050000) (General Permit) was issued. This permit addresses stormwater discharges associated with industrial activity for facilities that discharge stormwater to waters of the state, including Municipal Separate Storm Sewer Systems. The General Permit also addressed stormwater discharges associated with industrial activities at facilities that provide on-site infiltration of industrial stormwater discharges associated with the Facility.

For both industrial and municipal wastewater facilities, in lieu of obtaining coverage under both the General Permit and their individual NPDES permit, the MPCA has added the necessary industrial stormwater requirements language and limits and monitoring to this permit so that coverage under this NPDES permit alone will cover both permits. Additional discharge stations (SD008 and SD009) have been created with specific limits and monitoring, and electronic Discharge Monitoring Reports are required to be submitted annually. There is also a new Industrial Stormwater Chapter (Chapter 11) specific to this Facility.

**Mercury Minimization Plan (MMP)**

On December 28, 2000, MCES submitted a system-wide Voluntary Mercury Reduction Agreement (MCES system-wide MMP) to the MPCA and received a certificate of participation from the MPCA dated January 12, 2001. Since that time, MCES has actively undertaken source reduction efforts and other activities to reduce the amount of mercury into the MCES owned and operated facilities, and provided reports to the MPCA detailing the activities and results of these activities. This system-wide approach to mercury management and reporting will be carried forward into the NPDES/SDS permits for the MCES owned and operated facilities to satisfy the statewide mercury reduction requirements. Subsequent MCES issued permits will reference this MCES system-wide MMP in lieu of an individual requirement for each MCES owned and operated facility.

The purpose of the MCES system-wide MMP is to evaluate collection and treatment systems to determine possible sources of mercury as well as potential mercury reduction options. The submittal for the updated MCES system-wide MMP is included in the Hastings WWTP Permit (MN0029955).

**Variances**

The draft permit does not include any variances to Clean Water Act requirements.

## **Total Facility Requirements (TFR)**

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All NPDES permits issued in the state of Minnesota contain certain conditions that remain the same regardless of the size, location or type of discharge. The standard conditions satisfy the requirements outlined in 40 CFR § 122.41, Minn. R. 7001.0150, and Minn. R. 7001.1090. These conditions are listed in the Total Facility Requirements chapter of an NPDES permit. These requirements cover a wide range of areas including recordkeeping, sampling, equipment calibrations, equipment maintenance, reporting, facility upsets, bypass, solids handling, and changes in operation, facility inspections and permit reissuance.

## **Nondegradation and Anti-Backsliding**

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In accordance with MPCA rules regarding nondegradation for all waters that are not Outstanding Resource Value Waters (ORVW), nondegradation review is required for any new or expanded significant discharge (Minn. R. 7050.0185). A significant discharge is 1) a new discharge (not in existence before January 1, 1988) that is greater than 200,000 gallons per day to any water other than a Class 7 water or 2) an expanded discharge that expands by greater than 200,000 gallons per day that discharges to any water other than a Class 7 water or 3) a new or expanded discharge containing any toxic pollutant at a mass loading rate likely to increase the concentration of the toxicant in the receiving water by greater than one percent over the baseline quality. The flow rate used to determine significance is the design average wet-weather flow. The January 1, 1988, design average wet-weather flow for this Facility is 314 mgd.

This permit also complies with Minn. R. 7053.0275 regarding anti-backsliding.

Any point source discharger of sewage, industrial, or other wastes for which a National Pollutant Discharge Elimination System permit has been issued by the agency that contains effluent limits more stringent than those that would be established by parts 7053.0215 to 7053.0265 shall continue to meet the effluent limits established by the permit, unless the Permittee establishes that less stringent effluent limits are allowable pursuant to federal law, under section 402(o) of the Clean Water Act, United States Code, title 33, section 1342.